

# Estate Planning Tools

Software and User Manual (Version 2003.00)  
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Stephan R. Leimberg and Robert T. LeClair.  
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ISBN 1-888390-01-8  
March 28, 2003

**Brentmark Software**  
3505 Lake Lynda Dr., Ste. 212  
Orlando, FL 32817-8327

**Technical Support:** (407) 306-6160  
**FAX:** (407) 306-6107  
**Sales: 1-800-879-6665**

**Internet:** <http://www.brentmark.com>  
**E-mail:**  
Sales@brentmark.com  
Support@brentmark.com



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# Introduction to Estate Planning Tools

The program is based on a design by its authors, Stephan R. Leimberg and Robert LeClair. Estate Planning Tools is two products in one: one part handling Estate Planning and the other part handling Financial Planning.

The **Estate Planning Tools** side is designed as a series of standalone models focusing on estate planning. The program strives to present the latest calculations involving cutting-edge estate planning techniques (such as GRATs and SCINs) as well as many other common tools and techniques.

The **Financial Planning Tools** side provides models that are designed to quantify an individual's current financial position relative to his or her objective. It was also designed to help attain greater financial security.

The following information explains the setup of the program and some helpful tools and features. Then, continue reading to learn how to use each individual calculation.

## System Requirements

To run Estate Planning Tools on your computer you must meet the following system requirements:

- Windows 95 or later, Windows NT 4.0 or later.
- 5 MB of hard disk space free.
- 16 MB of RAM.

## Installing the Program

1. Insert the Disk 1 into the floppy drive.
2. From the Start menu, select Run.
3. Type A:\Setup.exe.
4. Click OK.
5. Follow the on-screen directions to finish the installation.

## The Main Menu

The Main menu displays a list of all the calculations that are available in the program. The program is divided into two parts:

- Estate Planning Tools
- Financial Planning Tools

To view the list of calculations that are available for each part of the program, click on the corresponding button (Estate Planning Tools or Financial Planning Tools). A brief description of each calculation is provided on the bottom portion of the screen. Move your mouse over each calculation name to view the descriptions. Click on a calculation name to access the calculation screen. Click Main Menu from any calculation screen (or press **F5**) to return to the Main Menu.

## Calculation Screens

Each calculation listed on the Main Menu has a calculation screen. The calculation screen provides a place to enter data. It also provides results for the entered data. All calculation screens are basically divided into two parts: the top part of the screen is where data is entered into entry fields. The bottom part of the screen is where the results are displayed through charts, tables, schedules, or graphs.

The program automatically corrects illegal entries. The entry fields are automatically reformatted when you leave the field or press Enter. Therefore, it is not necessary for you to enter dollar signs or commas.

Results are calculated immediately as values are entered into the program. Or, press **F9** to calculate after entering a value. The results will appear on the bottom part of the screen. Print reports of the results and any graphs that are available. Reports can also be exported to a text file and then imported into a word processing program where they can be converted into a letter or report. Results can also be exported into a spreadsheet file (Wk1 file) to allow further analysis of the data.

## The Menu Bar

The Menu Bar may be accessed from the Main Screen or from any calculation screen. Some options in the menus may only be accessible from a calculation screen.

### File Menu

The File Menu contains the following list of commands:

**New** – Opens a new file.

**Open (Shortcut: F3)** – Opens existing files. In the Open window:

1. Enter the name of the file that you wish to open.
2. Or, select the directory where the file is located (if it is different from the current directory) and select the file from the files listed.

**Save** – Saves the current data to a file. In the Save window:

1. Specify a directory in which to save the file. (The default directory –C:\Estate Planning Tools– is listed at the top of the window.)
2. Enter a name for the file you wish to save.
3. Click the OK button to save the file or the Cancel button to return to the calculation screen.

**Save As (Shortcut: F2)** – Saves the current file under a different name and/or extension.

1. Specify a directory in which to save the file. (The default directory, which is the program directory, is listed at the top of the window.)
2. Enter a new name for the file you wish to save.
3. Click the OK button to save the file or the Cancel button to return to the calculation screen.

**View File Contents** – Provides a list of all the calculations that are included in the current file.

- **To view or make changes to a calculation on the list:**
  1. Select the calculation from the list.

2. Click Edit. The selected calculation screen will open.
- **To remove a calculation from the list:**
    1. Select the calculation from the list.
    2. Click Delete. The selected calculation name will be removed from the list. **Note:** This deletion is irreversible, so make sure you have selected the correct item.

**Print Setup** – Specifies a printer and the desired printer settings. You can use the default printer or choose a printer from the list. More printing options or report options are available through the Print menu item.

**Print (Shortcut: F6)** – Displays all of the printing options that are available to print a report. You may also print a report from this window.

**Location of Data Files** – Allows you to designate the folder for storing the data files.

**Convert Old Data Files** – Older versions of Estate Planning Tools and Financial Planning Tools used a different file format for saving files. To read the files created in versions prior to 2000 and save them into the new format, you must use the Conversion program. The Conversion program provides two different ways of converting older files: Typical and Custom.

- **Typical Conversion**

Converts older files within a directory that have the same file name but have different file extensions. These files are placed into a new file, which keeps the same file name but adds the new file extension used by the program (.Num). This is the quickest way to convert your older files.

**Example**

Converting a GRAT file named Myfile.Nga and a GRUT file named Myfile.Ngu will create a new file named **Myfile.Num**.

- **Custom Conversion**

Converts any valid older files and creates a completely new file. You must enter a new name for the file. The new extension used by the program will be added (.Num).

**Example**

Converting a GRAT file named Myfile.Nga and a GRUT file named Yourfile.Ngu will create a new file. You must provide a new name for the new file (i.e., **Newname.Num**).

**Edit Menu**

The Edit menu contains the following commands:

**Main Menu (Shortcut: F5)** – Takes the user back to the Main Menu.

**Financial Planning** – Provides a list of all of the calculations on the Financial Planning part of the program. Click on any name to access the calculation screen.

## Estate Planning Tools

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**Estate Planning** – Provides a list of all of the calculations on the Estate Planning part of the program. Click on any name to access the calculation screen.

**Calculate (Shortcut: F9)** – Calculates the results based on the inputs you have entered.

**Clear Inputs (Shortcut: F7)** – Clears the entry fields.






**AFR Rates (Shortcut: F4)** – Accesses the AFR Rates Manager. This program provides a list of rates starting from January 1989 through the present month.

### Help Menu

The Help menu contains several ways for you to search for answers to any questions you may have about the program or any of its calculations. You can browse the contents of the online Help system or search for a specific item. You can also access the Explanatory Text through this menu. The explanatory text provides general information for each calculation. It is designed to be included in the report that you give to your client.

## The Toolbar

The toolbar contains buttons that provide shortcuts to several of the most commonly used features.

Button	Function
	Click to open a file
	Click to save current inputs
	Click to access the Print dialogue box and print to a selected printer
	Click to view help on the current calculation.
	Click to view a text explanation of particular calculations
<b>Main Menu (F5)</b>	Click to return to the Main Menu screen

## Function Keys

Here is a list of the Function Keys and what they do. The Function Keys are shortcuts on the keyboard for some of the most commonly used actions in the program.

<b>Key</b>	<b>Function</b>
<b>F1</b>	Accesses the Help on the current calculation.
<b>F2</b>	Saves a previously saved file under another name.
<b>F3</b>	Opens a file.
<b>F4</b>	Accesses the AFR Rates Manager.
<b>F5</b>	Accesses the Main Menu.
<b>F6</b>	Accesses the printing options.
<b>F7</b>	Clears all inputs from a calculation screen.
<b>F8</b>	Accesses the explanatory text for the active calculation.
<b>F9</b>	Derives results from any new information that is entered into the program.
<b>Alt-F4</b>	Exits the program.

## AFR Rates Manager

The AFR Manager stores a list of available rates starting from January 1989 through the present month. The rates are needed for a number of calculations in the program (i.e., Charitable Remainder Annuity Trust or Grantor Retained Annuity Trust).

The Applicable Federal Mid-Term 120% Annual Rate changes monthly and is reported in *The Wall Street Journal*. (See the Federal Interest Rates in the Money and Investing section of the *Journal*, generally between the 18<sup>th</sup> and 23<sup>rd</sup> of the preceding month.) This rate can often be found earlier on Brentmark's web site at <http://www.brentmark.com/AFRs.htm>.

**Note:** If a §7520 Rate entry field shows 30%, the AFR table must be updated. Thirty percent is the default value that appears when there is not a current AFR available for the chosen Transfer Date. Download or manually update your AFR table.

## Update the AFR Manager

There are two ways to update the AFR Manager: use the Download Latest AFRs button or click the button with the world image on it.

### Download Latest AFRs button

1. Click the Download Latest AFRs button. A confirmation window appears.
2. Click Yes. The rates will download into the program.

**Note:** If you have Internet access through a commercial proprietary service (e.g., AOL, Compuserve, Prodigy) you must establish a connection before selecting this option from the menu. If you are connected through a network or a cable modem, your Internet connection is already established.

### World image button

1. Click the button with the world image on it. The following options are available:
  - Download AFR Rate
  - Go to AFR Web Page
2. If you select Download AFR Rate:
  - a. A confirmation window appears.
  - b. Click Yes. The rates will download into the program.
3. If you select Go to AFR Web Page:
  - a. You are automatically connected to the AFR Rates page on Brentmark's web site.
  - b. View or manually enter the rates into the AFR Manager.

## The Report

A report can be printed for each calculation of the program. Each calculation's report can include any or all of the following pieces: a text report, a graph, and/or explanatory text. Choose to number pages, change margins, add headings, and other things to customize the report.

### Building and Printing the Report

1. From the File menu, select Print (F6). The Print window appears.
2. Select the items and options you wish to include with the report:
  - A) **Select Reports to Include:**
    - a. **Text Report** – Select the checkbox to include a text report that shows the results of your analysis.
    - b. **Graph** – Select the checkbox to include a graph in the report.
    - c. **Explanatory Text** – Select the checkbox to include background information on the calculation.
  - B) **Include on Reports:**
    - a. **Page Numbers** – Select the checkbox to print page numbers on the report.
    - b. **Date** – Select the checkbox to print the date on the top of the front page of the report.
    - c. **Time** – Select the checkbox to print the time on the top of the front page of the report.
    - d. **Closing Statement** – Select the checkbox to include a closing statement at the end of the report.
3. **Selected Printer** – Displays the currently selected printer.

### Print Window

Here's a list of the buttons on the print window and their functions:

- **Send to Printer** – Click to print the report to the printer listed at the bottom of the window.
- **Print Preview** – Click to preview the printed report.
- **Print to Text File** – Click to save the report as a text file.
- **Print to WK1 File** – Click to save the report as a spreadsheet file.
- **Report Options** – Click to access advanced settings to customize the report. (See Report Options for more information.)
- **Printer Setup** – Click to select another printer and its printing properties.



## Report Options

The Report Options provides more advanced settings to customize the report. (From the File menu, select Print. In the Printing window, click Report Options.) Select any of the following options:

**Heading** – The heading appears at the top of each page of the report. Enter the text you wish to include in the heading of the report.

**Closing Statement** – A closing statement may be included at the end of a report. Note: A closing statement must be created with another program. (e.g., Notepad)

- **Load Statement** – Click to load a closing statement file into the report.
- **Clear Statement** – Click to clear the closing statement from the report.
- **Set as Default** – Click to assign the chosen closing statement as a default setting.

**Fonts** – Select a font to be used for the report. Arial is the default font. Fonts can be changed for the title, report, headers, and highlights.

**Margins** – Change the top, bottom, left, or right margins.

**Options** – Select to include any of these items on the report.

- **Page Numbers** – Select the checkbox to include page numbers on the report.
- **Print Heading** – Select the checkbox to print the heading on the front page of the report.
- **Closing Statement** – Select the checkbox to print a closing statement at the end of the report.
- **Print Date** – Select the checkbox to print the date on the top of the front page of the report.
- **Print Time** – Select the checkbox to print the time on the top of the front page of the report.
- **Monochrome** – Select the checkbox to print the report in black and white.



## Using the Estate Planning Tools

The Estate Planning Tools side of the program presents cutting-edge estate planning techniques. There are 49 planning models, each including reports with graphs and detailed explanations that you can present to your clients. You can also save results to spreadsheets to create more customized analyses.

The Estate Planning Tools is divided into eight sections. Each section contains a list of calculations that pertain to estate planning.

- **Valuation**
- **Tools of Estate Planning**
- **Trusts**
- **Charitable**
- **Techniques of Estate Planning**
- **Taxes**
- **Retirement**
- **Future Value**

## Common Entry Fields

Some of the calculations in the Tools of Estate Planning, Trusts, and Charitable sections have many common entry fields. This section is dedicated to those entry fields. Take note of this section; you may be referring back to it.

**Trust Type** – By selecting a type of trust, you are selecting when the trust terminates. For example:

- Select “Term” as the type of trust. You must enter the amount of years the term should last. Enter 10 years for the Term. This indicates that the trust ends at the end of 10 years.
- Select “Life” as the type of trust. You must enter an age (life expectancy of the person used) to determine the length of the trust. Enter age 65. This indicates that the trust ends when the person turns 65.

**Transfer Date** – The program is able to choose the correct §7520 rate and mortality table by the date entered in this entry field.

**§7520 Rate** – The program automatically enters the correct §7520 discount rate if you have kept the AFR Rates Manager up-to-date. If the AFR Rates Manager is not up-to-date, the program shows a 30% value for the selected transfer date. The program automatically rounds the rate to the nearest 2/10 of 1% as required under §7520.

**Note:** For May or June of 1999, you have the choice of using the Mortality Table 80CNSMT or the Mortality Table 90CM. For any dates prior to May 1, the program will automatically use the 80CNSMT mortality table. For any dates after June 30, the program will automatically use the 90CM mortality table.

**Percentage Payout** – Enter the initial annuity payout rate with up to five places after the decimal. This input is expressed as a percentage of the initial capital value of the trust.

# Valuation

## Capitalization of Income

### *Main Menu Name: Capital*

Capitalizes income (such as rents, dividends, or profits from a business) in order to estimate the value of a business or other asset. It allows seven different capitalization rates to be used simultaneously so that a planner or client can develop a high-low valuation range.

Fair market value is the price agreed upon by both the buyer and the seller, assuming that both are aware of all relevant facts. Unfortunately, a universally-accepted method of calculating fair market value does not exist. Calculating fair market value through income capitalization, however, is a commonly accepted and reasonably accurate method. This method converts the projected flow of income from a business or asset into its present value.

To receive accurate results using the income capitalization method, you must use realistic values for your income and capitalization rate. The following guidelines will help you to determine appropriate values.

### **Income**

Income includes rents, dividends, and profits from a business. Apply the following adjustments when calculating your income (in the case of a business, use five-year average after-tax profits):

- Increase earnings if salaries were too high; reduce earnings if salaries were too low.
- Add back bonuses paid to stockholder-employees and excessive rents paid to shareholders.
- Reduce earnings if rents paid to shareholders were less than what was reasonable in the market.
- Exclude non-recurring income or expense items.
- Make appropriate adjustments for excessive depreciation, significant changes in accounting procedures, widely fluctuating profits, or abnormally inflated (or deflated) earnings.
- Weight the average to receive a more accurate assessment of the company's prospects if a strong upward or downward earnings trend occur.

### **Capitalization Rate**

The capitalization rate is the rate of return you wish to receive from the asset or business. When determining what capitalization rate to use, consider the following:

- The smaller the capitalization rates, the higher the value.
- Less risky investments (such as a stable business with large capital asset bases and strong financial history) are generally assigned lower capitalization rates.
- A business that relies on the presence of only one or two key people is generally assigned a higher capitalization rate.

**Note:** One correct or official capitalization rate does not exist. Different rates are used at different times.

### Entering Data

1. **Capitalization Rate** – Enter an appropriate capitalization rate.
2. **Adjusted Earnings** – Enter the adjusted earnings from the asset, or adjusted profits from the business.

### Results

The calculation results show the estimated value of a business or other asset. This value is calculated by capitalizing the business or asset's income. To capitalize income, the calculation divides the adjusted earnings by the capitalization rate.

Results are displayed for the capitalization rate specified at the Capitalization Rate input (highlighted in blue), and for six additional rates. By displaying results for seven different capitalization rates, the calculation provides a high-to-low range of values.

## Valuation Through Comparable Stock

### *Main Menu Name: Val. EPS*

Calculates a price-earnings ratio for a publicly traded security. This ratio is then used to determine a price per share for a closely-held business interest to be valued.

**Note:** Finding a perfect match is rarely possible. Even close matches may require adjustments before accurate results can be obtained.

Often, the value of a closely-held business can be determined by referencing a comparable company whose stock is listed and actively traded on a securities exchange or on the over-the-counter (OTC) market. This approach is based on the theory that if two companies are more-or-less comparable, and the listed company is selling for five times earnings, then the closely held firm's stock is also worth five times its earnings.

Finding an appropriate comparable company requires research and careful consideration. Similarities in product lines, size, growth, and profitability are indications of comparable companies. Inspecting balance sheets and income statements is also recommended. Trade magazines are a good place to begin research.

### **Entering Data**

1. **Per Share Market Price of a Similar Company** – Enter the per share market price of a publicly-held company that is comparable with the closely held business.
2. **Earnings Per Share of that Same Company** – Enter the earnings per share of the publicly-held company.
3. **Earnings Per Share of the Business to be Valued** – Enter the earnings per share of the business to be valued.

### **Results**

The calculation results show a price-earnings ratio for a publicly traded security. This ratio is used to calculate a price per share for a closely-held business. To calculate this value, the calculation divides the price at which the traded stock is selling by the earnings of the business. It then applies the resulting price-earnings ratio to the earnings per share of the closely-held corporation to calculate the market value per share. The equivalent capitalization rate is also shown in the results.

## Book Value Method

### *Main Menu Name: Book Val.*

Determines the value of a corporation's common stock by subtracting both liabilities and the par value of preferred stock from the value of the firm's assets. It then arrives at a per share value by dividing the number of common shares outstanding into the adjusted book value.

Essentially, book value is assets minus liabilities. Book value is often a good starting point when calculating the value of a closely-held corporation. This is especially true for the following businesses:

- The business is predominately an asset holding company (e.g., an investment company).
- The business is a real estate development business whose assets are the primary profit-making factor.
- The business relies primarily on one person.
- The business is currently (or close to) liquidating.
- The business is very competitive, but only marginally profitable. In this case, examining past profits is an unreliable method of predicting future earnings.
- The business or its assets are relatively new.
- The business is likely to merge with another firm.
- The business is burdened with large deficits.

Most businesses record assets at historical cost in their company's books. For this reason, the firm's book value must be adjusted to reflect the assets at fair market value instead of historical value.

Adjustments are recommended in the following cases:

- When assets are recorded in the company's books at cost rather than market value. For example, a closely-held investment company usually records its marketable securities at cost. This creates a discrepancy between the book value and the actual worth of the business.
- When assets are recorded in the company's books at an excessive depreciation rate. For example, an operating company purchases machinery or equipment originally costing \$1,000,000 but records a depreciated value of \$300,000. The actual value of the equipment may be significantly more or less than either of these figures.
- When a firm's balance sheet fails to disclose potential lawsuits, unfavorable long-term leases, or other such items.
- When assets with significant economic value have been completely written off.
- When the business has carried franchises, goodwill, and other such assets on the books at a modest cost.
- When the business has trouble collecting accounts receivable.
- When the firm's inventory contains goods that are either obsolete or not readily marketable.
- When the business has insufficient working capital or liquidity position. When the firm has a significant number of long-term debts.
- When the business's retained earnings are high only because they have accumulated over a substantial period. This indicates a business with low current earnings and minimal potential for increasing its earnings.

**Note:** Be sure not to double count an asset when combining two or more methods.



In addition to the above adjustments, the value of any other class of stock with a priority as to dividends, voting rights, or preference to assets in the event of a sale or liquidation must be deducted from the value. For example, a common stock owner does not realize the value of the assets until preferred stock owners have been satisfied.

Book value should be used in conjunction with other valuation methods and not as the only method of valuing a closely-held business. It should also not be used when capital plays a minor role in profit making or when you are valuing the stock of a party that does not have the voting power to force limitations. In that case, book values have little relevance.

### **Entering Data**

1. **“Adjusted” Asset Value of Common Stock** – Enter the adjusted asset value of the common stock.
2. **Total Adjusted Liabilities** – Enter the total amount of adjusted liabilities.
3. **Par Value of Preferred Stock** – Enter the par value of any preferred stock or other senior securities.
4. **Number of Common Shares Outstanding** – Enter the total number of common shares outstanding.

### **Results**

The calculation results show the value per share of a corporation’s common stock. To calculate this value, the calculation subtracts both liabilities and the par value of preferred stock from the adjusted assets to arrive at the firm’s adjusted book value. It then divides the number of common shares outstanding into that adjusted book value to determine the value per share of the common stock.

## Goodwill Valuation

### *Main Menu Name: Goodwill*

Determines a business value using the Goodwill approach. The Goodwill approach is a combination of two other approaches: the Adjusted Book Value approach and the Capitalization of Earnings approach. It determines a business value by adding the “goodwill” value to the average value of the firm’s total business value.

A closely-held business often earns more income than could be expected from the mere employment of capital invested by shareholders. The additional income is a result of an intangible value in the business.

A business’s goodwill value is estimated by capitalizing the “earnings attributable to intangibles.” In other words, the additional profits produced by the firm’s goodwill are divided by an appropriate rate. The goodwill value is then added to book value to determine the total business value.

A firm’s goodwill includes the following elements: business location and reputation; public recognition of the company name; customers and prospects; management skills; sales, operations, and accounting skills; employee ethics; and competition. Goodwill does not include the portion of profits attributable to the corporation’s ownership of patents, copyrights, formulas, or trademarks. Such items are intangible, but they are also identifiable.

Goodwill value should be used in conjunction with other valuation methods and not as the only method of valuing a business.

### **Entering Data**

1. **Average Annual Earnings** – Enter the average amount of earnings made annually by the business. Earnings should be averaged over a representative period (such as the past five years) and weighted, if necessary.
2. **Estimated Capitalization Rate** – Enter the estimated capitalization rate. This value is the amount by which the earnings from intangible assets will be divided to arrive at the goodwill value.
3. **Average Annual Asset Value** – Enter the average annual adjusted book value of the business’s assets.
4. **Rate of Return on Tangible Assets** – Enter the rate of return on the business’s tangible assets.

### **Results**

The calculation results show the company’s return and earnings from tangible assets, earnings from intangible assets, goodwill value, and total business value. Results are displayed for the rate of return specified at the Rate of Return input, and for four additional rates.

To calculate these values, the calculation multiplies the average annual asset value by the rate of return to arrive at the “earnings from tangible assets.” This value is then subtracted from the average annual earnings to arrive at the “earnings from intangible assets.” These numbers are then capitalized (divided) by the capitalization rate to determine the “goodwill value.” The final calculation, the “total business value,” is the sum of each of the goodwill values and the average annual asset value.

## Key Employee Valuation

### *Main Menu Name: Key Empl.*

Determines the value of a key (essential) employee to a business by taking a discount from the full value of the business and then showing the value of the business without the key employee.

Often, the loss of a key employee adversely affects the earning potential (and sometimes the stability) of a business. Closely-held corporations are especially vulnerable as their profits rely on the ability, initiative, and business connections of one employee or a small group of employees.

A common method of calculating the economic effect of the loss of a key employee is the discount approach. This approach applies a percentage discount to the fair market value of the business.

The discount approach requires an appropriate discount factor. Some authorities believe that if the business will survive the loss of the key employee and, in time, will hire a competent replacement, an appropriate discount factor is 15 to 20%. If the business will fail, or will be placed in jeopardy from the loss of the key employee, an appropriate discount factor is 20 to 45%. The officers of the company and the firm's accounting and legal advisors, however, should determine the exact discount factor. Consider the following when determining the discount factor:

- How long will it take the replacement to become as efficient as the lost key employee?
- How much will it cost to locate, situate, and train a replacement? Will the new employee want a higher salary?
- Is the replacement likely to make costly mistakes during the training period?
- Will the loss of the employee result in a loss of clientele?
- What percent of the firm's current net profits is attributable to the key employee?

While there are other methods of calculating the value of a key employee's contribution to a corporation, the discount approach is a quick and effective method that sidesteps many of the difficulties posed by alternative methods.

### **Entering Data**

1. **Fair Market Value of Business With Key Employee** – Enter the current market value of the business.
2. **Discount Without Employee** – Enter the discount to be applied to the market value of the business. This discount reflects the financial loss to the business caused by the key employee's death or disability.

### **Results**

The program displays the value of a key employee to a business and the value of the business without the key employee. The calculation determines the "value of key employee" by multiplying a specified discount percent by the full value of the business. This discount percent reflects the economic loss the business will suffer upon the loss of the key employee. The calculation then subtracts the value of the key employee from the value of the business to arrive at the "value without key employee."

## Special Use Valuation

### *Main Menu Name: Spec. Use*

Determines the special (current) use value of farm or business real property using the formula provided in the Internal Revenue Code.

If certain criteria are met, an executor may choose to value property based on its actual use instead of on its “highest and best” use. In some cases, this tactic reduces the value of farm and business real property up to \$770,000 in 2000, and \$750,000 prior to that.

While several methods of valuing this property exist, the valuation method used by this calculation is the most favorable and conclusive method. This method’s formula, shown below, capitalizes the potential flow of income from comparable property.

Where:

- a** = Average annual gross cash rental for comparable land.
- b** = Average annual state and local real estate taxes for such comparable land.
- c** = Average annual effective interest rate for all new federal land bank loans.

The income to be capitalized is the average annual gross cash rental income (for five years prior to the decedent’s death) minus the average annual state and local real estate taxes (for the same five-year period) applicable for that comparable land.

To qualify as comparable land, the land must be used for farming purposes and must be located in the same area as the farmland to be valued.

The executor is not permitted to use cash rentals from the farm to be valued. Rentals used from comparable farmland must have been the result of arm’s length bargaining.

The capitalization rate is the average billing rate charged on new agricultural loans to farmers in the farm credit district where the qualified property is located.

### **Entering Data**

1. **Capitalization Rate** – Enter the appropriate capitalization rate. This rate is the average annual effective interest rate applied to new federal land bank loans. If you do not know the rate, click the Capitalization Rates for 2000 button.
2. **Capitalization Rates for 2002** – Click the button to access the rates for the current valuation year for each state. Click on the row of the appropriate rate for your state to have the rate automatically applied to the program calculations.
3. **Years Prior to Death** – Enter the year prior to the decedent’s death. The program will automatically enter the four previous years from the year entered.
4. **Gross Rent of Comparable Land** – Enter the gross rent of comparable land for the given year.
5. **Real Estate Taxes** – Enter the real estate taxes for the given year.

### **Results**

The program shows the special (current) use value of farm or business real property. The calculation uses a formula provided in the Internal Revenue Code to calculate the property's special use value.

Essentially, the calculation determines the five-year average of the gross rent from the comparable land, subtracts the five-year average of real estate taxes, and capitalizes the difference. The result is the "Special Use Value."

## Financial Planning Ratios

### *Main Menu Name: Ratios*

Calculates 16 ratios used frequently in financial analysis. These ratios include liquidity, coverage, performance, utilization, and market ratios.

Valuation frequently involves financial analysis to determine an accurate price for a business interest. Determining the price for a business interest is necessary for two reasons:

1. To establish the financial status of the business to be valued, and
2. To find a publicly traded business that is comparable to the closely-held business (the value of the publicly traded business is then used to determine the value of the closely-held business).

Ratios are frequently used in financial analysis. A ratio is an equation that identifies the relationship of one quantity to another, such as current assets (\$20,000) to current liabilities (\$8,000). Ratios are also expressed as percentages, such as 1 to 5 equals 1, 5 (20%).

Ratios are used to compare the business to be valued to the same business's ratio in previous years, the ratios of competitors, and a goal set by the business's owners and financial advisors.

Ratios are often used to measure the following:

- The business's ability to meet its short-term obligations (liquidity ratios).
- The business's long-range ability to provide security for creditors (debt, coverage, or leverage ratios).
- The business's ability to generate a profit (performance ratios).
- The business's ability to use assets effectively (utilization ratios).
- The business's marketability (market measure ratio).

Accurate data is needed to calculate accurate ratios. This data can be obtained from balance sheets and income statements.

### **Entering Data**

Enter information for up to two companies.

1. **Company** – Enter the name of the company. Once you exit this entry field, the name of the company will appear on the tab.
2. **Cash** – Enter the amount of cash retained by the business.
3. **Accounts Receivable** – Enter the amount of the accounts receivable retained by the business.
4. **Inventory** – Enter the value of the inventory retained by the business.
5. **Current Assets** – Enter the value of the assets currently retained by the business.
6. **Current Liabilities** – Enter the value of the liabilities currently retained by the business.
7. **Working Capital** – Enter the amount of working capital retained by the business.
8. **Fixed Assets** – Enter the value of the fixed assets currently retained by the business.
9. **Total Assets** – Enter the value of all the assets retained by the business.
10. **Long Term Debt** – Enter the amount of long-term debts retained by the business.
11. **Total Liabilities** – Enter the total value of liabilities retained by the business.
12. **Net Worth** – Enter the net worth value of the business.
13. **Sales** – Enter the amount of sales in terms of dollars made by the business.

14. **Gross Profit (Margin)** – Enter the amount of gross profit made by the business.
15. **Operating Profit** – Enter the amount of operating profit made by the business.
16. **Inc. Before Interest + Tax** – Enter the amount of income made by the business before interest and taxes are applied.
17. **Interest Expenses** – Enter the amount of interest expenses applied to the business's income.
18. **Net Income** – Enter the amount of net income made by the business.

## **Results**

The program provides a list of 16 ratios for two companies (or for different years of the same company). These ratios are commonly used in financial analysis. The results show the value for each type of ratio.





# Tools of Estate Planning

## Inclusion of GRAT and GRUT

### *Main Menu Name: Inclusion*

Calculates the portion of the GRAT or GRUT asset that is includible in the donor's estate if death occurs before the trust term ends. However, it should be noted that inclusion rules are currently uncertain.

All or a portion of the GRIT, GRAT, or GRUT assets are included in the transferor-client's gross estate if his or her death occurs before the trust term ends.

In a GRIT, if the transferor-client retains an income interest that doesn't end before death, the entire trust corpus will be includible. GRATs and GRUTs measured solely by life would seem totally includible as well.

The IRS will likely take the position that the entire trust corpus for a GRAT or GRUT is includible under IRC §2039 where the client with a reversionary interest dies before the expiration of the term (see IRS Letter Rulings 9345035 and 9412036).

In a GRUT, the includible amount is (possibly) determined in three steps as follows:

1. Find the adjusted payout rate for which unitrust amount payable at the end of the year is equal to the payout rate/(1 + Section 7520 Rate).
2. Find equivalent income interest rate, step one adjusted payout rate/(1-adjusted payout rate).
3. Find includible portion. Divide the step 2 result by the Section 7520 rate.

For GRUT inclusion, see Rev. Rul. 76-273, 1976-2 C.B. 268. For GRAT inclusion, see Rev. Rul. 82-105, 1982-1 C.B. 133.

For GRATs and GRUTs that have limited freeze potential, tax savings can be assured by third-party owned life insurance.

### **Entering Data**

1. Click the appropriate radio button to work with a GRAT or GRUT calculation.
2. **Transfer Date** – Enter the month and year (mm/yyyy).
3. **§7520 Rate** – Enter a rate that correlates to the transfer date.
4. **Trust Value at Death** – Enter the federal estate tax value of the assets in the trust.
5. **Total Annual Payments** (appears only for GRATs): –Enter the total amount paid each year.
6. **Annual Payout Rate** (appears only for GRUTs) – Enter the annual payout rate.

### **Results**

The program calculates the value of the amounts that are includible\* and excludable in the client's estate.

**Note:** The IRS will likely claim 100% inclusion if the taxpayer does not survive the term.

## Self-Canceling Installment Note (SCIN)

### *Main Menu Name: SCIN*

Calculates the required principal premium and the interest premium on a self-canceling installment note for gift and estate tax purposes. It also calculates repayment schedules showing interest, principal, basis recovery, and gain for each scheduled payment.

An installment note is a promissory note (evidence of debt) usually issued in conjunction with the sale of property where at least one payment is to be received by the seller after the close of the taxable year in which the sale occurs. A self-canceling installment note is an installment note that contains a provision under which the buyer's obligation to pay automatically ceases in the event a specified person, called the measuring or reference life (usually the seller), dies before the end of the term of the note.

### **When is a self-canceling note used?**

An installment note is useful when a client owns a highly appreciated asset he would like to sell and wants to spread the recognition of and taxation on the gain over a term of years. (However, any gain attributable to excess depreciation that is subject to recapture under IRS §1245 or §1250 is fully recognized in the year of sale. Also, under installment sale rules, all gain is recognized in the year of sale, even if payments on the note extend over several years, if the subject of the note is publicly traded stock.) Installment notes with a self-canceling provision are especially useful when one family member, typically a parent or grandparent, wishes to transfer property to another family member, typically a child or grandchild, with minimal gift and estate tax consequences.

### **What Are the Estate and Gift Tax Consequences?**

In general, the fair market value of any unpaid installment obligation on the date of death is included in the estate of the seller. However, if the note contains a properly designed self-cancellation provision, the buyer is under no obligation to make any further payments after the seller's premature death, which leaves no unpaid balance to be included in the seller's estate. The self-canceling feature can be an effective means of transferring property to family members without estate or gift tax consequences in the event of the death of the seller-transferor before the last potential payment has been made under the terms of the installment note.

### **How Should a SCIN Be Structured?**

A SCIN will avoid adverse gift and estate tax treatment only if the self-cancellation provision is properly designed. The courts have held that:

The cancellation provision must be bargained for as part of the consideration for the sale. The purchase price must reflect this bargain either with a principal risk premium (above market sales price) or an interest rate premium (above market interest rate), and the seller may not retain any control over the property being sold after the sale.

If the self-cancellation provision is not properly designed, the seller may be deemed to have made a part-sale part-gift. If any of the transfer of the remainder interest (the canceled payments) is considered a gift, the entire value of the property sold, less the consideration actually paid, will be included in the decedent's gross estate. This problem can be avoided by structuring the note as much like a market note as possible, except for the principal or interest rate premium. Although not all issues of valuation and proper design have been resolved by regulation or by the courts, most authorities feel the debt instrument and the sales contract should both include the self-cancellation

clause. To avoid retained controls, the sales contract and/or note cannot place any restrictions on the use of the property by the buyer, including any restrictions on subsequent sales. (In general, a subsequent sale of the property by the buyer within two years of the original sale will trigger recognition of any remaining deferred gain by the original seller, even if the note has not been fully repaid.) Furthermore, it is advisable to avoid using the property sold as collateral for the note so the seller has no right to reacquire the property sold under any circumstances.

### **What Interest Rate or Discount Rate Should Be Used In A SCIN?**

Selecting the appropriate market rate of interest is perhaps the most difficult step in the process of designing and implementing a SCIN. This is because of conflicting requirements under the imputed interest or OID rules and the gift tax discounting rules of IRC §7520.

For income tax purposes, self-canceling installment notes are subject to the installment sale rules of IRC §453 and, in most cases, the imputed interest or original issue discount (OID) rules of IRC §§483, 1274, or 1274A. Although these rules are complex, the general rule is that the interest rate on an installment sale note must at least equal the appropriate applicable federal rate (AFR) with semiannual compounding. Failure to follow these rules may result in reapportionment of interest and principal of scheduled payments and imputation of interest income to the seller, even in periods in which he or she may not have received payments.

### **Interest Rate Requirements for Installment Sale Notes**

If the Term of the Note Is:

- Not Over 3 Years then the Applicable Federal Rate Is Federal Short Term Rate.
- Over 3 Years Up to 9 Years then the Applicable Federal Rate Is Federal Midterm Rate.
- Over 9 Years then the Applicable Federal Rate Is Federal Long Term Rate.

When a note is an installment note, providing for payments of principal during the term of the note (i.e., the note is not interest-only), the “term” of the note for purposes of determining whether to apply the short-term, mid-term, or long-term rates is the “weighted average maturity” of the note as defined by Treas. Reg. Sec. 1.1273-1(e)(3).

The applicable federal rates change monthly, are published each month by the IRS, and appear in many financial publications such as *The Wall Street Journal* (see Federal Interest Rates in the Money & Investing section, generally between the 18th and 23rd of the preceding month).

In general, the applicable federal rate that must be used depends on the term of the note. The rate that is used must equal or exceed the lowest of the appropriate-term rates for the month in which the transaction takes place or the prior two months. For example, assume the transaction takes place in June and the term of the note is six years. The interest rate should be selected from the lowest federal midterm rate for April, May, or June. If the federal midterm rates for April, May, and June are 6.78, 6.44, and 7.02 percent, respectively, the appropriate (minimum allowable) interest rate is 6.44 percent.

There are several important exceptions to the general rule for selecting the required interest rate for income-tax purposes. First, if the transaction involves a sale-leaseback, the required interest rate is the 110-percent applicable federal rate for the appropriate term. Second, if the stated principal amount (essentially the total sales price of the property) is less than \$2,800,000 (as indexed for inflation since 1990), a cap of 9 percent compounded semiannually applies. That is, if the appropriate AFR exceeds 9 percent, 9 percent may be used; if not, the appropriate AFR is the minimum allowable rate. Third, installment sales involving certain transfers of land between family members may use a 6 percent

interest rate compounded semiannually, but only in cases where the sales price of the land does not exceed \$500,000.

To complicate matters, valuations of remainder interests for *gift tax purposes* are governed by the rules of §7520, which use the *120-percent* applicable federal *midterm* rate to determine what is called the §7520 rate. In the absence of an adequate price or interest rate premium, a SCIN contains a potential gift tax element equal to the actuarial value of the canceled portion of the note in the event of the seller's premature death. Therefore, it appears that two different interest rate factors must be used when structuring a SCIN:

- The applicable federal rate (AFR) for the purpose of allocating interest income and principal on payments on the note and,
- the §7520 rate for determining the principal or interest rate risk premium.

Although §483 explicitly states that the imputed interest rules (which apply to most installment sale notes for less than \$2.8 million) are applicable for both income tax and gift tax valuation purposes, the case law has been inconsistent. The U.S. Court of Appeals for the Seventh Circuit has upheld the interpretation that §483 applies for both income and gift tax purposes. However, the Tax Court has refused to follow this precedent in other circuits. The Tax Court has held in other circuits that §483 only applies for income tax purposes, not gift tax valuation purposes. If the Seventh Circuit Court's position is ultimately sustained in the other circuit courts, then one interest rate, the applicable federal rate (AFR) under the imputed interest rules, will serve for both income tax and gift tax valuation purposes in most self-canceling installment sale notes. Otherwise, in all circuits but the seventh it may be necessary to use the §7520 rate for purposes of determining the risk premium in SCINs and the AFR under the imputed interest rules to allocate interest and principal on payments on the note. (More on the risk premium later.)

However, the imputed interest rules essentially set a minimum interest rate on installment sale notes for income tax purposes. Consequently, since the §7520 rate is typically higher than the AFR under the imputed interest rules, the §7520 rate is probably a safe-harbor rate that can be used for both income tax and gift tax purposes.

For a given face amount and term of a note, a higher interest rate assumption means greater payments on the note. If the objective is to minimize the cost to the buyer, as is often the case in the typical intra-family transfer, required payments on the note will be minimized if the (usually) lower AFR, rather than the (usually) higher §7520 rate, is used for determining the required payments and for apportioning interest and principal.

### **What Is the Maximum Allowable Term of a Self-Canceling Installment Note?**

The term of a SCIN should not exceed the seller's actuarial life expectancy. If the term of the note extends beyond the seller's life expectancy, the IRS is likely to re-characterize the note as a private annuity for income tax purposes. In this event, the income portion of the payments is nondeductible as interest, which is likely to have adverse tax consequences to the buyer in cases where investment or trade or business property is involved.

Although the internal revenue code, regulations and case law have set no clear guidelines, if the seller is in normal health for his or her age, the expected return multiples for a single life as presented in Table V of IRC Reg. §1.72-9 have been an acceptable measure of life expectancy.

In the past, standard mortality factors and life expectancies could be used unless death was imminent, which had been interpreted to mean death was expected to occur within one year. In recently released proposed regulations, the IRS has amended and expanded this “mortality test.” Under the proposed rules, if the individual who is the measuring life of the interest being transferred is known to be terminally ill, special actuarial factors, rather than the standard factors, must be used in valuing the interest.

Terminal illness is defined as an “incurable illness or other deteriorating physical condition that would substantially reduce a person’s life expectancy to the extent that there is at least a 50 percent probability that the individual will not survive for more than one year from the valuation date.” The proposed regulations would be effective for valuation dates occurring after the date the regulations are published as final regulations.

It is unclear at this time how it is to be determined whether a person has at least a 50 percent probability of dying within a year. However, quite a number of serious diseases and conditions, such as heart disease, diabetes, many cancers, Alzheimer’s disease, etc., do not reduce life expectancy to a 50 percent probability of death within one year until they are in quite advanced stages. It would appear, therefore, that under the new proposed “mortality test” many people with serious diseases or deteriorating physical conditions may use standard mortality factors and life expectancies when designing installment sales with a self-cancellation feature.

### How Is the Risk Premium Determined?

If the buyer and seller are not close family members and the transaction is at arm’s length by an informed seller and informed buyer, neither of whom is under any obligation to sell or buy, the negotiated sales price and note terms can generally be presumed to reflect an adequate premium for the cancellation feature. However, the tax laws essentially presume transactions between close family members are not at arm’s length. Therefore, it is critical to establish the adequacy of the risk premium for the cancellation feature. Since a risk premium can only be measured relative to fair market value or the market rate of interest, it is equally critical to properly substantiate the fair market value of the property being sold and the appropriate market rate of interest.

In the case of property such as listed stocks and bonds where there is an established, well-functioning market, fair market value is simply the price at which it could be sold outright based on market prices when the installment sale commences. (Although installment sales of listed stocks are not generally recommended because of the requirement to recognize all gain in the year of sale.) For other types of property, such as closely-held stock, artwork, or certain real estate, a professional appraisal may be required to establish fair market value.

The mortality factors used for computing the risk premium for the cancellation feature typically are the same as those used for valuing annuities, life estates, and remainders for gift and estate tax purposes as provided in Table 80CNSMT or Table 90CM.

**Note:** For May or June of 1999, you have the choice of using the Mortality Table 80CNSMT or the Mortality Table 90CM. For any dates prior to May 1, the program will automatically use the 80CNSMT mortality table. For any dates after June 30, the program will automatically use the 90CM mortality table.

These mortality factors are *not* the same as the mortality factors used to compute the life expectancies of Table V of IRC Reg. §1.72-9. However, in contrast with valuations of private annuities and various interests in trust for gift and estate tax purposes, IRS pronouncements indicate that there is some

leeway with SCINs to establish that the terms are reasonable. The seller's *actual* health status and life expectancy rather than his or her *actuarial* life expectancy may be considered in designing the terms and the risk premium of the SCIN. This means that higher (but probably not lower) mortality factors than those for the seller's attained age from Table 80CNSMT or Table 90CM may be used to determine the risk premium for the cancellation feature if the seller's health is below average. Whether such adjustment is *required* is uncertain. However, many authorities feel that normal mortality factors based on the seller's attained age may be used even if the seller is in poor health, unless there is at least a 50-percent probability of death within one year.

The risk premium may take one or a combination of two forms. First, the sales price of the property may be increased above the fair market value that would be paid in an outright sale or in an installment sale without the cancellation feature. In this case, the standard AFR would be used to apportion the interest and principal components of the payments. Alternatively, the property may be sold for its fair market value, but an interest rate greater than the standard AFR may be used to apportion interest and principal.

How the principal and interest rate risk premiums are determined is perhaps best explained by example. Suppose your client, aged 60, wishes to sell property with a fair market value of \$125,000 to her son in an installment sale. The son will pay \$25,000 on the date of the sale and pay off the balance of the note in three equal annual installments. Assuming the applicable federal short-term rate is 6.4 percent, three annual payments of \$37,688.17 would be required to pay off the \$100,000 balance on a regular non-cancelable installment sale note for 3 years.

This payment is determined by solving the following equation:

$$\text{Pmt} = \$100,000 \div \sum_{k=1}^3 \frac{1}{1.064^k} = \$100,000 \div 2.653352387 = \$37,688$$

Rearranging terms, the equation can be expressed as follows:

$$\$100,000 = \frac{\text{Pmt}}{1.064^1} + \frac{\text{Pmt}}{1.064^2} + \frac{\text{Pmt}}{1.064^3}$$

Now, assume your client wants to include a cancellation provision in the installment sale and note providing that the sale will be complete and the note will be considered satisfied in full by all payments up to the date of her death in the event she dies before the end of the 3-year term. Assuming she is in normal health for a 60-year-old person, the note will qualify as a self-canceling installment note, rather than a private annuity, since the Table V life expectancy for a 60-year-old person, 24.2 years, is greater than the 3-year term of the note.

To compute the required payments on the note, the payments must be adjusted for the probability that she is alive to receive the payments when scheduled. Let  ${}_{60}P_k$  represent the probability that a person age 60 will still be alive  $k$  years later. Based on Table 80CNSMT factors, the probabilities for the 3-year term of the note are, respectively,

$${}_{60}P_1 = 0.98632$$

$${}_{60}P_2 = 0.97160$$

$${}_{60}P_3 = 0.95578$$

In addition, assuming your client does not reside in the Seventh Circuit Court's region, the interest-rate factor should be the §7520 rate rather than the short-term AFR. Assume the §7520 rate is 7.6 percent. The required annual payment may be computed using a formula that is analogous to that presented above for the non-cancelable installment note. Specifically,

$$\$100,000 = \frac{{}_{60}P_1 \cdot \text{Pmt}}{1.076^1} + \frac{{}_{60}P_2 \cdot \text{Pmt}}{1.076^2} + \frac{{}_{60}P_3 \cdot \text{Pmt}}{1.076^3}$$

Or, in the rearranged form:

$$\text{Pmt} = \$100,000 \div \sum_{k=1}^3 \frac{{}_{60}P_k}{1.076^k} = \$100,000 \div 2.52308 = \$39,634$$

The principal risk premium can now be determined by calculating what the face amount would be for a non-cancelable installment note with three annual payments of \$39,634.10 using the short-term AFR of 6.4 percent. That is, the \$5,163.23 difference between the \$105,163.23 is computed and the \$100,000 fair market value is the principal risk premium.

$$\begin{aligned} \text{Face Amount} &= \frac{\$39,634.10}{1.064^1} + \frac{\$39,634.10}{1.064^2} + \frac{\$39,634.10}{1.064^3} \\ &= \$39,634.10 \quad \times \quad 2.653352387 \\ &= \$105,163.2 \end{aligned}$$

If an interest rate risk premium is preferred to the principal risk premium, the interest rate risk premium may be computed by solving for the interest rate that would equate the discounted value of the 3 annual payments of \$39,634.10 with the fair market value of \$100,000. That is, solve for the interest rate,  $I$ , that satisfies the following equation:

$$\$100,000 = \frac{\$39,634.10}{(1+I)^1} + \frac{\$39,634.10}{(1+I)^2} + \frac{\$39,634.10}{(1+I)^3}$$

In this case,  $I$  is equal to 9.1826 percent. Therefore, the interest rate risk premium is equal to 2.7826 percent (9.1826 percent minus the 6.4 percent short-term AFR).

### Which Risk Premium—Principal or Interest Rate—Is Preferable?

The choice of whether to reflect the risk premium as an increase in the sales price (principal risk premium) or as an increase in the interest rate (interest rate risk premium), depends on the relative tax situations of the buyer and seller. If the risk premium is reflected in the sales price (principal risk

premium), the seller will report more of each payment as capital gain and less as interest income. The buyer will pay less interest (which is deductible if the interest is investment or trade or business interest and not personal interest), but his or her basis will be higher. If the property is depreciable and the buyer and seller are in similar tax brackets, the principal risk premium may be preferred to give the buyer a larger depreciable base. However, if the property is not depreciable, the buyer may prefer the interest rate premium where the basis is lower but deductible interest payments are higher.

### **Is It Possible to Split the Risk Premium between Principal and Interest?**

Theoretically, some appropriately weighted combination of principal risk premium and interest risk premium would be acceptable. A weighted-combination risk premium may be determined using the template in a two-step fashion. First, compute the principal risk premium and interest rate risk premium using the appropriate market rate of interest. Second, choose an interest rate somewhere between the market rate and the risk-premium-adjusted interest rate computed in the first pass and enter it as the market rate of interest in the data input section (leave the §7520 rate as it is). The resulting principal risk premium will be lower than that computed originally using the market rate of interest. The summary statement and repayment schedule for the installment note with principal risk premium will now reflect the combined risk premiums. The interest rate premium is equal to the difference between the market rate and the second (higher) rate entered. The revised and lower principal risk premium is reflected on the summary statement. The repayment schedule will show the effects of each risk premium in the allocation of interest, gains, and basis recovery.

### **How Can the Analyses Be Adjusted to Reflect Greater-Than-Average Mortality Risk?**

One simple method to adjust for a shorter-than-average actual life expectancy, if desirable, is to use mortality factors for an age that is older than the seller's actual age. For example, assume the actual life expectancy of a 60-year-old seller is only about 5 years, due to some health problem such as an advanced heart condition. An inspection of Table V shows that a normal 90-year-old person has a life expectancy of 5 years. The mortality factors for a 90-year-old person could be used to determine the risk premium by simply entering age 90, rather than age 60, as the age of the seller.

### **Can the Life of Someone Other Than the Seller Be Used to Trigger the Cancellation Feature?**

Although there is little case law or precedent on SCINs to draw upon, if the precedents set for private annuities apply as well to SCINs, it would appear the measuring life for a SCIN may be someone other than the seller. For instance, in special circumstances it might be desirable to use the buyer, the first of either the buyer or seller to die, or another third person as the measuring life or lives for the cancellation feature. It would appear that if the term of the note does not exceed the life expectancy of the reference life, whomever that may be, and the risk premium is computed based on that life, the SCIN should pass muster with the IRS.

### **What Kind of Repayment Schedules Are Used in SCINs?**

Installment notes may be designed with virtually any schedule of payments, but they most frequently conform to one of two basic payment schedules. Level-principal notes schedule equal periodic payments of principal on the note together with accrued interest. For example, if the principal value of the note is \$1,000 and it is to be paid off over 5 years, the debtor would pay \$200 of principal each year together with the accrued interest. If the interest rate were 10 percent, for instance, the first payment would be \$300, \$200 of principal and \$100 of interest. The second payment would be only \$280, \$200 of principal and \$80 of interest on the remaining principal balance. Although the principal



amount is fixed or level each year, the total payment declines each year because of the decreasing interest component of the payment.

Level payment self-amortizing notes are the second and most frequently used type of installment note. This type of note is similar to the standard home mortgage with level annual payments. With this type of note, the principal portion of each payment starts low but increases with each payment. Conversely, the interest component starts high but declines with each payment as a greater portion of the principal on the note is paid off.

In either case, the term of the installment note may be less than the amortization or principal recovery period of the note. If the amortization or principal-recovery period of the note is greater than the term of the note, the last payment in the term of the note, called a balloon payment, is larger than the rest of the payments. It is equal to the remaining principal balance of the note plus the normal payment.

For example, assume the client discussed above wants the term of the note to remain at 3 years, but wants the payment schedule to be based on a 5-year amortization period. In this case, the first two payments would be less than the \$39,634 determined above, but the final payment would be higher. Specifically, the first two annual payments would be equal to \$25,498 and the third-year payment would be equal to \$71,985.

Deferring a larger portion of the repayment on the note to the later years increases the risk premium. In this case, the principal risk premium is \$6,248, or \$1,085 more than the \$5,163 risk premium associated with three equal annual payments of \$39,634. Similarly, the interest rate risk premium also increases. In this case, it is 2.8065 percent as compared with the 2.7826 percent associated with the three equal annual payments.

### Entering Data

1. **Transfer Date** – Enter the month and year (mm/yyyy).
2. **Discount Rate** – Enter the IRC §7520 discount rate (which is 120% of the applicable federal midterm rate, rounded to the nearest 2/10ths of 1 percent) for the month in which the transaction is completed. The default for this entry is the current month's Section 7520 rate from the AFR table stored in the program.
3. **FMV of Property** – Enter the fair market value of the property being sold.
4. **Cost Basis** – Enter the cost basis in the property being sold.
5. **Recapture (Sec. 1245 or 1250)** – Enter the IRC §1245 (personal property) or §1250 (real estate) depreciation recapture, if any.
6. **Initial Down Payment** – Enter the down payment or other property (boot) paid to seller in year of sale.
7. **Age(s)** – Enter the age (to the nearest birthday) of the seller(s) (or measuring life, if different). Enter 0 if there is no second measuring life.
8. **Term of Note** – Enter the term of the installment note (which must be less than the remaining life expectancy of the seller (or measuring life, if different)).
9. **Type of Note** – Select Self-Amortizing, Level Principal, or Interest-Only. Self-amortizing means that the combined principal and interest payments are constant over the term of the note (so the interest component of each payment will decline over the term of the note, while the principal component increases). Level Principal means that the principal of the note is paid in equal annual installments, with annual interest payments based on the principal then outstanding (so the interest payments will decline over the term of the note). Interest Only means that only interest is paid over the term of the note, with a balloon payment of principal at the end of the note.

10. **Annuity Valuation** – Select the Complete Method or the Curtate Method. These are the two possible methods for valuing periodic payments. The IRS consistently values annuities and other periodic payments using the “complete annuity” assumption, which is that, if the recipient dies during the year, the recipient receives a pro-rata payment for the year, regardless of whether or not the recipient is entitled to any payment under the governing document. The other method is known as a “curtate annuity,” and it assumes that the recipient receives nothing if the recipient dies before the end of the year.
11. **No-Risk-Premium Market Interest Rate** – Enter a market rate of interest for the note, which should not be less than the applicable federal rate for the month in which the sale occurs. The applicable federal rate for a note of not more than three years will be the federal short-term rate, the applicable federal rate for a note of more than three years but not more than nine years will be the federal mid-term rate, and the applicable federal rate for a note of more than nine years will be the federal long-term rate.
12. **Payment Period** – Select the number of payments that will be made each year to the beneficiary (Annual, Semiannual, Quarterly, Monthly, Quarterly, and Weekly).
13. **Amortization or Principal-Recovery Period of Note** – Enter the amortization or principal-recovery period of the note (which must be equal to or greater than the term of the installment note).
14. **Balloon Payment** – Select the check box to use an amortization or principal-recovery period that is greater than the term of the note, so that there will be a balloon payment of unpaid principal at the end of the note.
15. **View Repayments** – Click the button and the repayment schedules will show the amount of principal and interest paid each year, the amount of capital gain and return of basis attributable to each payment of principal, and the principal balance remaining at the end of the year.

### Results

This calculation determines both the principal risk premium and the interest rate risk premium for the self-cancellation feature of the selected type of installment note. It does this in a manner that is consistent both with the installment sale and imputed interest rules of IRC §§453, 483, 1274, and 1274A and the gift tax valuation rules for remainders using the discount rate of IRC §7520 and the mortality factors of Table 80CNSMT or Table 90CM.

The calculation also presents summary statements and repayment schedules for the case where the risk premium is included in principal and where it is included in the interest rate. These statements and schedules show the allocation of interest, principal (and its components of gain and basis recovery), and recapture (if any) both in the year of sale and in subsequent years over the selected term of the note.

The Summary Tab will include the following results:

- **Mortality Risk Premium (Principal)** This is the amount that must be added to the principal of the note in order for the present value of the future payments of interest and principal to equal the unpaid purchase price.
- **Total Sale Price** The sum of the fair market value of the property and the principal premium (if any).
- **Principal Amount of Note** The total sale price, less the initial down payment.

- **Mortality Risk Premium (Interest)** This is the amount that must be added to the market interest on the note in order for the present value of the future payments of interest and principal to be equal to the unpaid purchase price.
- **Total Interest Rate** The sum of the market rate of interest on the note and the interest premium (if any).
- **Annual Principal Payments** If the note payments are level principal, the amount of each year's principal installment. (The other types of notes result in varying principal payments.)
- **Annual Interest Payments** If the note payments are interest only, the amount of each year's interest payment. (The other types of notes result in varying amounts of annual interest.)
- **Total Annual Payments** If the note payments are amortized, the total amount of each year's principal and interest to be paid. (The other types of notes result in varying totals of principal and interest.)
- **Total Interest To Be Paid** The total amount of the interest to be paid on the note if payments continue to the end of the term of the note (i.e., the seller does not die before the end of the term of the note).
- **Total Capital Gain** The total amount of capital gain to be realized on the sale, both from the original down payment and principal payments under the note.
- **Profit Percentage** The amount of capital gain divided by the total sale price (including any principal premium). The amount of gain to be realized each year upon each payment of principal will be the amount of the payment times this percentage.
- **Capital Gain Recognized in Year of Sale** The profit percentage, multiplied by the initial down payment.
- **Basis Recovery in Year of Sale** The amount of nontaxable basis to be recovered from the initial down payment.

## Private Annuity

### *Main Menu Name: Priv. Ann.*

Calculates the annual payment for a private annuity measured by one or two lives. It then calculates the tax free, capital gain, and ordinary income portions of each payment.

When a private annuity agreement is arranged, one party (the transferor-annuitant) signs over complete ownership of property to another party (the transferee-payor). In return, the transferee makes periodic payments to the transferor for a specified period of time (usually the lifetime of the transferor).

The private annuity is a useful tool for an individual who wants to spread out over his lifetime payments from selling a highly appreciated asset.

The private annuity is also as a useful federal estate tax saving tool because payments end when the transferor dies and the entire value of the asset sold is immediately removed from the transferor's gross estate. The private annuity allows someone who owns non-income-producing property to make that property productive.

The ideal transferor/payor situation is one that meets the following criteria:

- The transferor is in a high estate tax bracket or has no marital deduction.
- The property is capable of producing income and/or is appreciating rapidly.
- The payor is capable of paying the promised amounts.
- The parties trust each other (the private annuity must be unsecured).
- The transferor has other assets and sources of income.

### Entering Data

1. **Transfer Date** – Enter the month and year (dd/yyyy).
2. **§7520 Rate** – Enter a rate that correlates to the transfer date.
3. **FMV of Property** – Enter the fair market value of the property.
4. **Client's Basis** – Enter the transferor's adjusted basis (cost).
5. **Payment Period** – Select the number of payments that will be made each year to the beneficiary (Annual, Semiannual, Quarterly, Monthly, Quarterly, and Weekly).
6. **Payment Timing** – Select Begin or End to indicate when the payment should be made for the selected payment period. A Begin case is assumed to be the same as an End case with an additional payment made at the beginning of the period.
7. **Number of Annuitants** – Enter the number of annuitants (1 or 2).
8. **Ages** – Enter the age of the annuitant(s). Valid age inputs are 5 to 109.

### Results

The program calculates an annuity factor and adjusts it with payout frequency factors. It then divides the resulting factor into the fair market value to arrive at an annual payout. Basis is then divided by joint life expectancy to arrive at the tax-free portion of each annual payment. The life expectancy is also used to arrive at the capital gain portion. Subtracting the tax-free and capital gain portions from the total payment computes the ordinary income portion.

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## Annuity, Life Estate and Remainder Factors

### *Main Menu Name: Factors*

Performs life estate and remainder calculations for term or one to three lives. These calculations result in factors that are the same as those found in the IRS' Aleph Volume. Such factors are used for various tax purposes including federal estate tax valuations.

### **Entering Data**

Click the button for the calculation you want to perform (Annuity Factors or Life Estate & Remainder):

1. **Transfer Date** – Enter the month and year (dd/yyyy).
2. **§7520 Rate** – Enter the rate that correlates to the transfer date.
3. **Calculation Type** – Select a type of trust.
4. **Lives** – This entry field appears when Life or Shorter is selected as the Calculation Type. Enter the number of lives the calculation is based on. The program handles up to three lives.
5. **Ages** – Enter the current age(s) as of the nearest birthday. This entry field is not available for Term calculations.
6. **Term** – This entry field appears when Term or Shorter is selected as the Calculation Type. Enter the number of years the term will last (Valid entries: 1-99 years).
7. **Aggregate Annual Payments/Principal** – For annuity calculations, enter the total of the payments to be made each year. (For example: enter \$12,000 for monthly payments of \$1,000 each.) For life estate and remainder calculations, enter the fair market value of the principal that is subject to the life estate.
8. **Payment Timing** – For annuity calculations, select Begin or End to indicate when the payment should be made for the selected payment period. This helps to determine what payout frequency factor is used in the calculation.

### **Results**

#### **Annuity Factors**

The present value of the annuity is determined by multiplying the annual payments by a factor. It is calculated as follows.

The program first calculates a base factor based on the age or ages (for an annuity for life), term of years (for an annuity for a term), or the term and age or ages (for an annuity for the shorter of a term and life).

The program also calculates frequency adjustment factors for semiannual, quarterly, monthly, and weekly payments. When the annuity is for a term, the frequency adjustment factor will be from Schedule K of Treas. Reg. §20.2031-7 when the annuity is payable at the end of each period and from Schedule J of that regulation when the annuity is payable at the beginning of each period. For life calculations and the shorter of term or life, the frequency adjustment factor is from Schedule K.

When an annuity for life is payable at the beginning of each period, the value of the annuity is increased by adding the value of the first payment.

### **Life Estate and Remainder Factors**

For life estate and remainder calculations, the program calculates the relevant factors and then multiplies those factors by the principal amount to determine the value of each interest.

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## Simplified GSTT Worksheet

### *Main Menu Name: Gen. Skip*

Provides simplified GSTT (Generation-Skipping Transfer Tax) calculation that is applied to the gross transfer of any property when the tax is paid from other property (Direct Skip Transfers). IRC Section 2602 states that the amount of GSTT imposed is equal to the taxable amount multiplied by the applicable rate. The applicable rate and the inclusion ratio, as defined under IRC Chapter 13, will also be calculated.

GSTT is a flat tax at the highest estate tax rate that is imposed on any transfer of property made during a person's lifetime or at the time of their death to a donee considered a skip person. When the property is distributed to a beneficiary who is two or more generations younger than the transferor (or a skip person), the amount distributed may be subject to the GSTT. Currently, if the amount of property transferred to a skip person exceeds the GST exemption (the amount each person is allowed to make during their lifetime or at the time of their death), the GST tax must be considered. Annual gifts of \$11,000 or less (\$22,000 for spouses who gift-split) may be also be excluded for GSTT purposes. Other qualified transfers may also be made annually. A qualified transfer includes:

- Tuition paid to an educational institution that meets the IRS income tax deductible contribution eligibility guidelines.
- Payments made to a medical care provider by the transferor for such care.

Both of these types of qualified transfers are not subject to any dollar amount limitations as long as they meet the IRC 2503(e) criteria. The GSTT exemption is granted to every US citizen and can be used to shelter smaller estates. Once the exemption is made, it is irrevocable.

The GSTT rate is the maximum estate tax rate, which is 55% through 2001, 50% in 2002, 49% in 2003, 48% in 2004, 47% in 2005, 46% in 2006, and 45% for 2007 through 2009. Under the Economic Growth and Tax Relief Reconciliation Act of 2001, the GSTT is supposed to be repealed in 2010, but then reinstated (at 55%) in 2011 (when the act "sunsets").

The GST exemption is \$1,000,000 and is indexed for inflation through 2003. Under the Economic Growth and Tax Relief Reconciliation Act of 2001, the exemption will be \$1,500,000 in 2004 and 2005, \$2,000,000 in 2007 through 2008, and \$3,500,000 in 2009. If the act "sunsets" in 2011, the exemption will return to the inflation-adjusted \$1,000,000.

The GSTT is applied to three types of generation skipping transfers:

- **Direct Skips** - Any transfer that is subject to any estate (see IRC Chapter 11) or gift (see IRC Chapter 12) taxes made to a skip person.
- **Taxable Termination** - Any termination of an interest of any beneficiary in a trust unless:  
a) a non-skip person has an interest in the property, or b) no distribution can be made from the trust to a skip person after the termination.
- **Taxable Distributions** - Any distribution other than a Direct Skip or a Taxable Termination made to a skip person.

The simplified GSTT calculation is determined by an exclusion ratio of: the Total Value of the gift divided by the Amount of exemption. This exclusion ratio can lower the effective tax rate.

## Entering Data

1. **Year** – Enter the year of the calculation. The Exemption Allocated to Transfer will be monitored by the year, and the maximum allowed amounts differ on a yearly basis.
2. **Value of Property Transferred** – Enter the before tax value of the property being transferred. (The gross value.)
3. **Amount of Annual Exclusion Allowable for GSTT (if any)** – Enter the amount of annual exclusion (can be up to \$11,000/year or \$22,000/year for spouses who gift-split).
4. **Exemption Allocated to Transfer** – Enter the amount of the individual GST exemption that you want applied to the transfer. You may allocate any portion of the GST exemption to the property being transferred. This allocation, once made, is irrevocable and should be used efficiently.
  - **Exemption for 1998 is \$1,000,000**
  - **Exemption for 1999 is \$1,010,000**
  - **Exemption for 2000 is \$1,030,000**
  - **Exemption for 2001 is \$1,060,000**
  - **Exemption for 2002 is \$1,100,000**
  - **Exemption for 2003 is assumed to increase by 3% for inflation**

If the maximum GSTT exemption allowed is not entered, or an amount less than the maximum allowed amount is entered, a button with the computer icon will appear. Click on it to calculate the maximum exemption allowed. If you enter the year 2003, you will see a message advising you that the GSTT Exemption allowed is only an estimate.

5. **State and Federal Tax Paid Out of Property Transferred** – Enter the total dollar amount of taxes paid on the transfer of the property to the beneficiary.
6. **Gift or Estate Tax Charitable Deductions Allowed** – Enter the dollar amount of any charitable deductions made on the property being transferred.

## Result

The program shows the net amount of the property transferred after figuring in the applicable annual exclusion. The applicable fraction, which always equals 1 if the amount of GST exemption is equal to the value of the property transferred, is also given. The applicable fraction equals some number between 0 and 1 if the value of the property involved in the transfer is greater than the amount of GST exemption allowed (and applicable GSTT annual exclusions).

The calculation also shows the Applicable Rate and the Inclusion Ratio, which equals 1 minus the applicable fraction, and then these two ratios are used to calculate the applicable rate that is the maximum federal estate tax rate (currently this rate is 55% multiplied by the inclusion ratio). The Direct Skip GSTT is given based on the calculation of the taxable amount multiplied by the applicable rate. This amount is the amount of a transfer that is subject to GSTT when the GSTT is paid from other property. The Direct Skip GSTT is given based on the calculation of the taxable amount multiplied by the applicable rate. This amount is the amount of a transfer that is subject to the GSTT when the GSTT is paid from other property.



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## Total Cost of GST Transfer

### *Main Menu Name: GSTT*

Determines the actual total dollar amount (or real cost) needed to transfer a target amount through GST to a grandchild or other skip person. The calculation uses the GSTT applicable rate (determined by the **Gen. Skip** calculator) and the Estate/Gift Tax rates (the donor's estate tax bracket) to arrive at the total amount of taxes applicable to the transfer. The economic differences between tax exclusive and tax inclusive transfers are also shown.

The GST has been used primarily as a method to keep property out of the taxable estates of the immediate generation of a family. The beneficiary would be permitted to have control of the income, use the principal as needed, and control distribution of the property as long as the beneficiary does not have a general power of appointment.

The GSTT rate is the maximum estate tax rate, which is 55% through 2001, 50% in 2002, 49% in 2003, 48% in 2004, 47% in 2005, 46% in 2006, and 45% for 2007 through 2009. Under the Economic Growth and Tax Relief Reconciliation Act of 2001, the GSTT is supposed to be repealed in 2010, but then reinstated (at 55%) in 2011 (when the act "sunset").

### Entering Data

1. **GSTT Applied Rate** – Enter the applicable rate (determined by the Gen. Skip calculation). This rate is 55% if there are no exemptions or adjustments.
2. **Estate/Gift Tax** – Enter the donor's estate tax bracket rate.
3. **Target Transfer to Grandchild** – Enter the amount to be transferred.
4. **Transfer Type** – The GSTT is computed differently depending on the type of transfer involved. Select one of the following types from the list by clicking its radio button:
  - Lifetime Direct Gift
  - Testamentary Direct Skip (assumes GSTT paid out of other assets)
  - Taxable Termination or Distribution (where original transfer was by gift)
  - Testamentary Taxable Termination or Distribution (where original transfer was testamentary)

### Results

The Summary Tab (calculation results) displays all of the figures that are necessary to arrive at the total dollar amount that is needed to transfer a specified amount of money through GST. The results show not only the real cost of transferring the target amount, but also the differences between "tax exclusive" (direct skips) and "tax inclusive" (taxable distributions and taxable terminations).

## Trusts

The Grantor Retained Annuity Trust and the Grantor Retained Unitrust models require you to define the type of trust that you are planning or analyzing. The program gives the following choices:

- **Term** – If a trust is distributed for a term of years, the trust provides periodic distributions to a non-charitable beneficiary for a period not in excess of 20 years.
- **Life** – If a trust is distributed for life, the trust provides periodic distributions to a non-charitable beneficiary for a period not in excess of the life expectancy of the individual. If you choose a life trust, the program can calculate up to five lives.
- **Shorter** – If a trust is distributed for shorter, the trust ends immediately at the donor's death. If you choose a shorter trust, the program can calculate up to five lives.

## Exhaustion Test

The Grantor Retained Annuity Trust and the Grantor Retained Unitrust perform an exhaustion test. This test can be performed using one of two different methods:

- **The IRS Annuity Factor Method:** This is the method that appears to have been used by the IRS in §25.7520-3(b)(2)(v), Example 5. It uses published annuity factors to determine when the trust exhausts, and what the payment is in the last period of the trust.
- **The Exact Method:** This method creates the schedule of payments based on the assumption that the trust will grow at a rate equal to the 7520 rate. From the schedule, it is able to determine exactly when the trust exhausts and how much the final payment is.

The program defaults to using the IRS Annuity Factor method to best reflect §25.7520-3(b)(2)(v), Example 5. See the Reference section to learn more about §25.7520-3(b)(2)(v), Example 5.

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## GRIT and Qualified Personal Residence Trust

### *Main Menu Name: QPRT*

This calculation determines the gift tax implications of establishing a grantor-retained income trust (GRIT) or qualified personal residence trust (QPRT). Through this trust, the grantor retains an income interest in irrevocably transferred property, and the remainder interest is passed to the grantor's beneficiaries. These computations can be used for both residence trusts and qualified residence trusts and for GRITs transferring property to non-family members.

An irrevocable trust is established with the trustee directed to pay to the grantor the income from the trust for a specified number of years. When the grantor's trust interest terminates, the property in the trust is distributed outright to family members. In some cases, the trust continues for their benefit.

At the time the trust is funded, a future gift is made. The value of that gift is the excess of the value of the property transferred over the value of the interest retained by the grantor. The value of the retained interest is found by multiplying by the present value of an annuity factor for the number of years the trust will run.

For example, assuming a 7.6% discount rate, if the trust will run for 10 years and \$100,000 is initially placed into the trust subject to a reversion, the value of the (nontaxable) interest retained by a 65-year-old grantor would be \$63,458.

The value of the (gift taxable) remainder interest would be the value of the capital placed into the trust (\$100,000) minus the value of the nontaxable interest retained by the grantor (\$63,458). Therefore, the taxable portion of the grantor retained income trust gift would be \$36,542. This remainder interest, by definition, is a future interest gift and will not qualify for the annual exclusion. The donor will have to utilize all or part of the remaining unified credit (or if the credit is exhausted, pay the appropriate gift tax). If the grantor's income interest lasts long enough, however, the value of his or her retained interest would approach—actuarially—100 percent. This would essentially eliminate any gift tax liability.

The advantage of the GRIT is that it is possible for an individual to transfer significant value to family members but to incur little or no gift tax. In the example, the cost of removing \$100,000 from the gross estate (plus all appreciation from the date of the gift) is the use of \$36,542 of unified credit. The GRIT is a grantor trust. This means all income, deductions, and credits are treated as if there was no trust and these items were attributable directly to the grantor.

The entire principal (date of death value) must be included in the estate of a grantor who dies during the term of the GRIT since he has retained an interest for a period which, in fact, will not end before his death. If any gift tax had been paid upon the establishment of the GRIT, it would reduce the estate tax otherwise payable. If the unified credit was used, upon death within the term, the unified credit used in making the gift will be restored to the estate (if the grantor's spouse consented to the gift, his or her credit will not be restored). The estate's beneficiary (possibly through gifts received from the GRIT grantor) could purchase life insurance on the life of the grantor. Then, if the grantor should die during the term of the GRIT, there would be sufficient cash to pay any estate tax.

IRC Code §2702 has severely limited the use of GRITs. Non-family members can use GRITs for any type of asset for any term. Family members will find GRITs useful only when the property transferred is a personal residence or for some tangible property.

The regulations under §2702 allow two different kinds of trusts to hold personal residences, a “personal residence trust” (or “PRT”) and a “qualified personal residence trust” (or “QPRT”). A PRT is very limited and inflexible, because it must not hold any assets other than the residence and must not allow the sale of the residence. A QPRT can hold limited amounts of cash for expenses or improvements to the residence, and can allow the residence to be sold (but not to the grantor or the grantor's spouse). However, if the residence is sold, or if the QPRT ceases to qualify as a QPRT for any other reason, either all of the trust property must be returned to the grantor, or the QPRT must begin paying a “qualified annuity” to the grantor (much like a grantor-retained annuity trust, or GRAT).

### Entering Data

1. **Transfer Date** – Enter the month and year (mm/yyyy).
2. **§7520 Rate** – Enter the rate that correlates to the transfer date.
3. **Principal** – Enter the value of the capital placed into the trust.
4. **Grantor's Current Age** – Enter the grantor's age as of the nearest birthday.
5. **Second Age (0 if none)** – Enter a second age if a second life will also be used to determine the income interest.
6. **Term of Trust:** – Enter the number of years the trust will provide income to the grantor.
7. **With Reversion?** – Select the check box if reversion is to be included. Generally, this should be checked. If reversion is not selected, the age inputs are not used.
8. **After-Tax Growth** – Enter the after-tax growth rate of the trust assets.
9. **Comb. Death Tax Bracket** – Enter a tax bracket which takes into account both the state and federal death taxes.

### Results

The Summary Tab displays the taxable portion of a GRIT. To calculate this value, the calculation determines the value of the interest retained by the grantor (income interest plus reversion). It then subtracts the value of the grantor's retained interest from the principal placed into the trust. The result is the taxable portion of the GRIT. The Taxable Gift, the Value of Property after three years, and the Potential Death Tax Savings (Combined Bracket times [value of Property minus Taxable Gift]) are also shown in the results. See the factors used in the calculation in the Factors tab.

The “qualified annuity” is the annuity that would be paid to the grantor if allowed or required by the trust document upon the trust ceasing to be a qualified personal residence trust during its term (if the personal residence were sold, for example). See Treas. Reg. Section 25.2702-5(c)(8)(ii)(C).

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## Grantor Retained Annuity Trust

### *Main Menu Name: GRAT*

Calculates the value of the annuity interest retained by the grantor in a retained annuity trust (GRAT) for the grantor's life, a specified term, or the shorter of both. Through this tool, the grantor retains a fixed annuity interest in irrevocably transferred property. The remainder interest generally passes to the grantor's designated beneficiaries at the end of a specified term or at the earlier of the end of a specified term or the grantor's death. The gift tax value of the remainder interest is also computed.

A grantor retained annuity trust may be an effective means for a wealthy client who wants or needs to retain all or most of the income from a high-yielding and rapidly-appreciating property to transfer the property to a child or other person with minimal gift or estate tax. GRATs are particularly indicated where the client has one or more significant income-producing assets that he or she is willing to part with at some specified date in the future to save federal and state death taxes and probate costs, to obtain privacy on the transfer, and to protect the asset against the claims of creditors.

#### **Note**

In *Cook v. Commissioner*, The Tax Court (115 T.C. No. 2 (7/25/2000)) agreed with the IRS that a contingent spousal interest in a GRAT is not "fixed and ascertainable" and therefore should be ignored in valuing the taxable remainder. So, although Estate Planning Tools currently allows a second life calculation, users should be advised that a two life GRAT is highly risky.

#### **Note**

The U.S. Tax Court held Example 5 of Treas. Reg. Section 25.2702-3(e) to be invalid in *Walton v. Commissioner*, 115 T.C. No. 41. (See <http://www.ustaxcourt.gov/InOpHistoric/walton.TC.WPD.pdf>). 12/22/2000.

There is now authority for the proposition that a GRAT can be created for a term of years, with payments to the grantor's estate in the event of the death of the grantor during the term, and the GRAT can be valued using the annuity factors for a term of years (and not the shorter of a term or life). If this decision is correct (and not overturned on appeal), it should be possible to create a GRAT that has a remainder with a value of zero (or very close to zero).

To calculate the annuity percentage that will result in a near-zero remainder, make sure that the "Trust Type" is "Term," then click on the "Optimize" button and select "Optimize for Taxable Gift of Residual Interest in Trust."

If a GRAT is required to pay an annuity that will exhaust the GRAT before the end of the stated term, the literal application of Treas. Reg. Section 25.7520-3(b)(2)(i) might result in a small positive value for the remainder, due entirely to rounding in the calculation.

Finally, please note that the program cannot accurately value the GRAT created by the taxpayer in *Walton*. In order to comply with Treas. Reg. 25.2702-3(b)(3) (as it existed before amendment by T.D. 8899, 65 F.R. 53587), the *Walton* GRAT required payments shortly after December 31 of each year. The trust instrument required an annuity of 49.35% for the first 12 months and 59.22% the second 12 months of the two-year term. Prorating those payments on a daily basis, the trust created on 4/7/1993 required a payment of 36.3703% (269/365ths of 49.35%) on or after 12/31/1993, 56.6241% (96/365ths of 49.35% plus 269/365ths of 59.22%) on or after 12/31/1994, and 15.5757% (96/365ths of 59.22%) on or after 4/7/1995. (According to the Tax Court opinion, the trust actually distributed

36.3703% for 1993 and 56.6240% for 1994). This program is designed to value distributions based on the anniversary of the trust and the valuation of these irregular distributions is beyond the scope of the program.

### Entering Data

1. **Trust Type** – Select a type of trust.
2. **Transfer Date** – Enter the month and year (mm/yyyy).
3. **§7520 Rate** – Enter the rate that correlates to the transfer date.
4. **Grantors Age(s)** – Enter the grantor's (transferor-annuitant's) current age(s) as of the nearest birthday. Enter 0 for a one-life calculation or enter a value above 0 for a two-life calculation. The presence of a two-life calculation here does not infer that it is either a valid or an effective device. Although many law firms had concluded two-life GRATs were valid; apparently the IRS is not in agreement.
5. **Income Earned by Trust** – Enter the income earned by the trust. Enter a positive value. It is only used for the Economic Schedule, and it is applied to the Pre-discounted Fair Market Value, not the Discounted Fair Market Value. This need not be entered if you are not interested in that analysis.
6. **Term of Trust** – Enter the term of the trust.
7. **Annual Growth of Principal** – Enter the annual growth of the principal. Use a positive or negative value. It is only used for the Economic Schedule, and it is applied to the Pre-discounted Fair Market Value, not the Discounted Fair Market Value. This need not be entered if you are not interested in that analysis.
8. **Pre-discounted Fair Market Value** – Enter the value of contributed principal prior to any appropriate discount, such as for minority interests or lack of marketability. This value will not affect the gift tax calculations, but it will be used for the economic projections. When you enter a value for this input, the program automatically enters the same value for the Discounted Fair Market Value.
9. **Discounted Fair Market Value** – Enter the gift tax value of contributed principal after appropriate discounts, such as minority interests or lack of marketability. The program uses this value to calculate the annuity payout, the present value of the annuity payments, and the present value of the remainder for gift tax purposes. By default, this value is the same as the Pre-discounted Fair Market Value. You can change this value, however, if you later change the Pre-discounted Fair Market Value, the program will also change the Discounted Fair Market Value.
10. **Percentage Payout** – Enter the initial annuity payout rate with up to five places after the decimal. This input is expressed as a percentage of the initial capital value of the trust.
11. **Exhaustion Method** – Select the IRS Method or the Exact Method.
12. **Payment Period** – Select the number of payments per year (annual, semi-annual, quarterly, monthly, or weekly).
13. **Payment Timing** – Select Begin or End to indicate when the payment should be made for the selected payment period. A Begin case is assumed to be the same as an End case with an additional payment made at the beginning of the period.
14. **With Reversion?** – (This selection only appears when Term or Shorter is used) Select the check box if reversion is to be included. Reversion means that the assets should revert to the grantor's estate in case of the grantor's death during the term of the trust.
15. **Apply Walton Decision**—Check the box if you do not want to illustrate Example 5 of Treas. Reg. Section 25.2702-3(e). The U.S. Tax Court held Example 5 of Treas. Reg. Section 25.2701-3(3) to be invalid in *Walton v. Commissioner*, 115 T.C. No. 41.
16. **Varying Annuity Payments?** – Select the check box if you want to vary annuity payments. When you indicate there are varying annuity payments which do not grow by a constant rate, the

program always uses the Exact Method for Rev. Rul. 77-454. If you select this check box, the Edit button will appear.

17. **Edit** – This button appears when you select to have varying annuity payments. You can choose to grow annuity payments by a constant rate or enter your own yearly payout rates for Shorter or Term cases. The program allows the entry of a value more than 20% greater than the preceding value, but displays a warning on the screen.
18. **Is Transfer To or For the Benefit of a Member of the Transferor’s Family?/ Is Interest in Trust Retained by the Transferor or an Applicable Family Member?** – The special Section 2702 rules are applied when both of these checkboxes are selected.
19. **Optimize** – Click this button to have the program calculate the highest payout rate that passes the 10% test for the AFR you select. This feature is useful in creating a new trust if you have not designed one before.

### Optimize Button

The Optimize button will be beneficial for anyone drafting a trust. From the information that you provide this feature will find the Percentage Payout that provides the lowest taxable gift (\$0-\$1).

#### Optimizing for Life or Shorter of Term or Life

- If you click **Optimize For Taxable Gift of Residual Interest in Trust**, the program near-zeros the Taxable Gift Value of Residual Interest in Trust, without regard to Rev. Ruling 77-454.
- If you click **Optimize For Taxable Gift Limited By Rev. Rul. 77-454**, the program calculates the highest Rate of Annuity which results in a Rev. Rul. 77-454 Taxable Gift value which does not exceed the Shorter of Term or Life Taxable Gift value. If you selected not to Optimize and instead chose to increase the resulting Rate of Annuity by the smallest amount, you would generally get a calculation result where the Rev. 77-454 Taxable Gift value is slightly higher than the Shorter of Term of Life Taxable Gift. We do not perform a near zero-out calculation for the Rev. Rul. 77-454 Taxable Gift since the result would invariably be a nonsensical 99% Rate of Annuity.

**Note:** The second (or bottom) button will produce the result which is most consistent with IRS regulations and rulings.

#### Optimizing for Term

- If you click **Optimize For Taxable Gift of Residual Interest in Trust**, the program near-zeros the Taxable Gift (based on term interest). This would be an optimum result if Example 5 of Reg. 25.2702-3(e) were not a concern. The resulting Taxable Gift would be correct only if that IRS Regulation (or the IRS interpretation of that regulation) were ruled to be invalid.
- If you click **Optimize For Taxable Gift as per Reg. Sec. 25-2702-3(e), Ex. 5**, the program near-zeros the Taxable Gift as per Reg. Sec. 25.2702-3(e), Ex. 5 (which is the shorter of term of life valuation). This button is not available if you elected to apply the Walton decision.

**Note:** The second (or bottom) button will produce the result which is most consistent with IRS regulations and rulings.

### Results

Click on the various tabs in the bottom portion of the screen to view the results using Reversion, and to view the Economic Schedule. In addition, the calculation provides detailed analyses of the selected

type of GRAT showing required annuity factors, adjustment factors, and the subtraction method of computing the taxable gift value of the residual interest in trust.

A GRAT is created by transferring one or more high-yield assets into an irrevocable trust and retaining the right to an annuity interest for a fixed term of years or for the shorter of fixed term or life. When the retention period ends, assets in the trust (including all appreciation) go to the named remainder beneficiary (ies). In some cases other interests, such as the right to have assets revert back to the transferor's estate in the event of the transferor's premature death, may be included.

GRATs provide a fixed annuity payment, usually expressed as a fixed percentage of the *original* value of the assets transferred in trust. For example, if \$100,000 is placed in trust and the initial annuity payout rate is 6 percent, the trust would pay \$6,000 each year, regardless of the value of the trust assets in subsequent years. If income earned on the trust assets is insufficient to cover the annuity amount, the payments will be made from principal. Therefore, the client-transferor is assured steady and consistent payments (at least until principal is exhausted).

All income and appreciation in excess of that required to pay the annuity accumulate for the benefit of the remainder beneficiary (ies). Consequently, it may be possible to transfer assets to the beneficiary (ies) when the trust terminates with values that far exceed their original values when transferred into the trust and, more importantly, that far exceed the gift tax value of the transferred assets.

The gift tax value of the transferred assets is determined at the time the trust is created and funded using the subtraction method. The gift tax value is determined by subtracting the value of the annuity interest (and, in some cases, other retained interests, such as the right to have the assets revert back to the transferor's estate if he or she does not live the entire term of the trust) from the fair market value of the assets transferred in trust. How the annuity interest and any other retained interests are valued depends on who the remainder beneficiary (ies) is (are) and who retains the annuity and other interests relative to the transferor. There is a more restrictive and less appealing set of valuation rules when family members are beneficiaries and certain family members retain interests in the property both before and after the trust is created than when unrelated parties are involved.

When unrelated parties are involved, all interests are valued according to their actuarial present values using the valuation rules of IRC §7520. These rules mandate the use of a discount rate based on the 120% Applicable Federal Annual Midterm Rate for the month in which the trust is created and funded. The mortality factors from Table 80CNSMT or Table 90CM, if the interests have a life contingency, are also used.

**Note:** For May or June of 1999, you have the choice of using the Mortality Table 80CNSMT or the Mortality Table 90CM. For any dates prior to May 1, the program will automatically use the 80CNSMT mortality table. For any dates after June 30, the program will automatically use the 90CM mortality table.

If family members are involved, the gift tax valuation rules of IRC §2702 may apply. Under these rules, certain types of retained interests, such as the right to have trust assets revert to the transferor's estate in the event of the transferor's premature death, may be valued at zero when computing the gift tax value of the transfer. As a general rule, every retained interest but a qualified interest is assigned a value of zero for gift tax valuation purposes. In the case of a GRAT, a qualified interest is the right to receive fixed amounts payable annually, more frequently (a fixed annuity), or a qualified remainder interest. That is, any non-contingent remainder interest if all other interests in the trust consist of qualified retained interests (qualified annuities).



The right to receive a fixed amount means the annuity must be a specified fixed dollar amount or a fixed percentage of the *initial* value of the trust payable each year rather than merely the income produced by the assets in the trust. Although fixed payments throughout the term of the trust are the norm, final regulations define the term fixed amount more liberally. They would permit the annuity payments to increase or decrease in a systematic manner each year without adverse gift tax consequences. However, the annuity amount may not increase by more than 20 percent over the prior year. For example, if the initial annuity payment is \$1,000, the trust could provide that annuity payments in subsequent years increase by as much as 20 percent, to \$1,200 in the second year, \$1,440 the third year, and so on. If the transferor retains the right to the greater of a fixed amount or the trust income in each year for a term of years, the annuity will still be a qualified annuity. However, the right to the trust income, if any, in excess of the fixed amount is valued at zero for gift tax purposes. Thus, the retained interest is valued for gift tax purposes as if it did not include any rights to excess income.

### Term Calculations and the Regulations

According to the Regulations, the retained annuity interest's value cannot exceed the actuarial value of an annuity for the shorter of the specified term or life, even if the trust instrument itself calls for payment of a term-certain annuity. Therefore, when you run a Term case with the program, you will see three Taxable Gift values. The first is based solely on a Term Interest valuation (Taxable Gift 1) and is not supported by the Regulations. Some commentators suggest that this is the correct approach and that the Regulations are incorrect. The program then shows a Taxable Gift as per Reg. §25.2702-3(e), Ex. 5 (Taxable Gift 2) which is a shorter of term or life valuation. This more conservative value generally is a higher taxable gift value than would result otherwise. Finally, the program shows a Taxable Gift limited by Rev. Rul. 77-454 (Taxable Gift 3). When the exhaustion test of Rev. Rul. 77-454 starts to kick-in, it generally results in an even higher taxable gift value. The possible application of Rev. Rul. 77-454 in Term cases is dependent on the viewpoint that one must use a shorter of term or life valuation to begin with. If one did not need to use such a valuation, there would appear to be no argument for applying Rev. Rul. 77-454 at all.

Actuarially, the Example 5 values are rather straightforward unless you are running a case involving a payment made at the beginning of the period. For such cases, we use a Shorter of Term or Life calculation that has one less payment than usual. This is done to equalize the number of payments for the Shorter case with the Term case. Term cases with a payment at the beginning are valued actuarially by the IRS by simply adjusting the Frequency Adjustment Factor. For example, a two-year semiannual term valuation involves four payments at points 0, ½, 1 and 1½. However, Shorter of Term or Life cases (and for that matter, all cases with life contingencies) with a payment at the beginning of period are valued by the IRS by adding a payment to the normal end of the period valuation. For example, a two-year semiannual shorter of term or life calculation involves five payments at points 0, ½, 1, 1½ and 2. Our revised Ex. 5 calculations eliminate the last payment (the one at point 2 in our example) by using a pro-rata valuation for a one-year case and a two-year case to eliminate the last payment. This valuation approach is based on informal consultations with the National Office of the IRS.

For all three GRAT calculation types, the program includes a Rev. Rul. 77-454 test (also known as the exhaustion test). The program also shows Taxable Gift if the value of Rev. Rul. 77-454 is ignored (some commentators suggest Rev. Rul. 77-454 is incorrect although it is now part of the §7520 Regs.). It then shows the Taxable Gift limited by Rev. Rul. 77-454. Often the values are the same. However, if the Rate of Annuity is higher than the Sec. 7520 rate, the Taxable Gift under Rev. Rul. 77-454 will often be higher. In some cases where the Annual Payment Growth value is negative, the Rev. Rul. 77-454 Taxable Gift value may actually be lower.

### **Rev. Rul. 77-454 Test**

When Rev. Rul. 77-454 may apply for a Shorter of Term or Life calculation, the program performs the Rev. Rul. 77-454 Test. As for the mechanics of the 77-454 test, there are gray areas once you get beyond the simple case of an annual payment at the end of the period. The program uses an approach long followed for the similar Rev. Rul 77-374 test that is applied for Charitable Remainder Annuity Trust life cases. See George H. Moor Est., 43 TCM 1982-299, for the proposition that annual payments are adjusted by a payout frequency factor. For the Shorter Calculation with Gift 2 selected for the Near Zero-Out option, the program finds the Rev. Rul. 77-454 value which does not increase the Taxable Gift beyond what it would be under Gift 1 (i.e., the Taxable Gift before consideration of Rev. Rul. 77-454).

### **Economic Schedule**

For illustration purposes, the GRAT calculation also includes an Economic Schedule. Its growth and income values are calculated on an average annual basis, based on the Pre-discounted Fair Market Value entered for the contributed principal. It should be noted that the Pre-discounted Fair Market Value, Annual Growth of Principal, and Income Earned by Trust inputs are only used for the Economic Schedule and are not used for any other part of the GRAT calculations.

### **§2702 Rules**

The more restrictive valuation rules apply if the transfer is to or for the benefit of a member of the transferor's family and an interest in the trust is retained by the transferor or an applicable family member. A member of the transferor's family includes the transferor's spouse, ancestor, lineal descendent, an ancestor or lineal descendent of the spouse of the transferor, a brother or sister, and the spouse of any of these. A retained interest means a property interest held by the same individual both before and after the transfer in trust. An applicable family member is defined as the transferor's spouse, an ancestor of the transferor or an ancestor of the transferor's spouse, and the spouse of any such ancestor.

In summary, if the §2702 rules apply, the annuity must be for a fixed amount or a fixed percentage of the initial value of the trust for a specified term. The annuity will be considered for a qualified fixed amount if the scheduled payment in any year does not exceed 120 percent of the prior year's payment. The specified term may be the life of the annuitant, a fixed term or the shorter of a fixed term or the life of the annuitant. Regardless of the specified term, the annuity is valued for gift tax purposes as if it were for the shorter of a fixed term or the life of the annuitant.

In other words, although the terms of the trust may specify that the annuity is to be paid for fixed and certain term of years, regardless of the survival of the annuitant, it must be valued for gift tax purposes as if it terminates upon the annuitant's death. Any other retained interest (other than the retention of a qualified remainder interest), including any rights to income or to a reversion of trust assets in the event of premature death, are valued at zero for gift tax purposes. Therefore, the gift tax value of the transfer is determined by subtracting the actuarial valued of the qualified life-contingent annuity from the fair market value of the trust assets at the time the trust is created and funded.

If the transferor-annuitant survives the term of the GRAT, the assets transferred in trust are not included in the transferor's gross estate and escape estate taxation. However, if the transferor dies during the term of the trust, some or all of the trust's assets will be included in the transferor's gross estate. Although there is no statutory or regulatory authority on the issue, some experts think the maximum amount the IRS could include is the lesser of the entire trust corpus or the amount of

corpus required to provide the promised annuity for the term (without invading principal). This calculation can be performed by the Estate Planning Tools' **Inclusion** calculation.

This amount is computed by dividing the required annuity payment, for example, \$20,000, by the §7520 rate as of the date of the transferor-annuitant's death, say 7.6%, to derive the required capital, in this instance, \$263,158. A logical but more aggressive and uncertain argument can be made that the amount included should not exceed the present value of a term-certain annuity of the scheduled payments over the remaining term of the trust discounted at the §7520 rate. For example, if 3 years remained in the term of the trust, the present value of a \$20,000 term-certain annuity discounted at 7.6% would be only \$51,916. The risk of inclusion of trust assets should be covered by the purchase of life insurance owned by the appropriate beneficiary on the transferor's life.

Since the GRAT permits payment of both income and trust principal to satisfy the transferor-annuitant's annuity payments, the GRAT should be treated as a grantor trust for income tax purposes. This means the transferor-annuitant is taxed on income and realized gains on trust assets even if these amounts are greater than the trust's annuity payments. This further enhances this tool's effectiveness as a family wealth-shifting and estate-tax-saving device. The transferor-annuitant is effectively allowed to make gift-tax free gifts of the income taxes that are actually attributable to assets backing the remainder beneficiary's interest in the trust.

**Note:** The Estate Planning Tools program is a tool that is meant to aid professionals in performing actuarial calculations. It is, of course, your responsibility as a professional to determine their usefulness or applicability to any given case. We are always happy to discuss how we arrive at our calculations, but we cannot offer any estate planning advice. Although we strive to duplicate the same calculation results as the IRS, there can be no guarantee that the program will exactly duplicate IRS values. This is particularly true in the GRAT area since the IRS has published examples involving only the most simple fact patterns. Nonetheless, we believe Estate Planning Tools contains the most comprehensive and accurate coverage of GRAT calculations of any program available.

It should be remembered that the GRAT area is still evolving. There are gray areas involving many aspects of the calculations, especially when adjustments are required under Rev. Rul. 77-454 or Example 5 of the Regulations. Updates may be released from time-to-time to incorporate calculation changes to reflect new Regulations, Rulings and/or court cases. Such updates are sent automatically to those who subscribe to maintenance coverage.

## Grantor Retained Unitrust

### *Main Menu Name: GRUT*

Calculates the annuity interest retained by the grantor and the gift tax value of the remainder interest for a Grantor Retained Unitrust (GRUT). Through this tool the grantor retains essentially an annuity interest with payments equal to a fixed percentage of the value each year of property transferred to an irrevocable trust. The remainder interest generally passes to the grantor's designated beneficiaries at the end of a specified term or at the earlier of the end of specified term or the grantor's death.

A grantor retained unitrust may be an effective means for a wealthy client who wants or needs to retain all or most of the income from a high-yielding and rapidly appreciating property to transfer the property to a child or other person with minimal gift or estate tax. GRUTs are particularly indicated where the client has one or more significant income-producing assets that he or she is willing to part with at some date in the future to save federal and state death taxes, probate costs, to obtain privacy on the transfer, and to protect the asset against the claims of creditors.

A GRUT is created by transferring one or more high-yield assets into an irrevocable trust and retaining the right to an annuity interest for a fixed term of years or for the shorter of fixed term or life. When the retention period ends, assets in the trust (including all appreciation) go to the named remainder beneficiary (ies). In some cases other interests, such as the right to have the assets revert back to the transferor's estate in the event of the transferor's premature death, may be included.

GRUTs provide an annuity payment equal to a fixed percentage of the current value each year of the assets in trust. In this sense, a GRUT is similar to a variable annuity. The payout rate is fixed, but since the value of the assets can be expected to vary year to year, the dollar annuity payout also varies year to year.

For example, if \$100,000 is placed in trust and the annuity payout rate is 5 percent, the trust would pay \$5,000 the first year. If the value of the assets in trust increase to \$110,000 in the subsequent year, the payout would be \$5,200, 5 percent of \$110,000. If income earned on the trust assets is insufficient to cover the annuity amount, the shortfall in payments will be made from principal. All income and appreciation in excess of that required to pay the annuity accumulate for the benefit of the remainder beneficiary(ies). Consequently, it may be possible to transfer assets to the beneficiary(ies) when the trust terminates with values that far exceed their original values when transferred into the trust and, more importantly, that far exceed the gift tax value of the transferred assets.

The gift tax value of the transferred assets is determined at the time the trust is created and funded using the subtraction method. The gift tax value is determined by subtracting the value of the annuity interest (and, in some cases, other retained interests, such as the right to have the assets revert back to the transferor's estate if he or she does not live the entire term of the trust) from the fair market value of the assets transferred in trust. How the annuity interest and any other retained interests are valued depends on who the remainder beneficiary(ies) is (are) and who retains the annuity and other interests relative to the transferor. There is a more restrictive and less appealing set of valuation rules when family members are beneficiaries and certain family members retain interests in the property both before and after the trust is created than when unrelated parties are involved.

When unrelated parties are involved, all interests are valued according to their actuarial present values using the valuation rules of IRC §7520. These rules mandate the use of a discount rate based on the 120% Applicable Federal Annual Midterm Rate for the month in which the trust is created and funded. The mortality factors from Table 80CNSMT or Table 90CM, if the interests have a life contingency, are also used.

If family members are involved, the gift tax valuation rules of IRC §2702 may apply. Under these rules, certain types of retained interests, such as the right to have trust assets revert to the transferor's estate in the event of the transferor's premature death, may be valued at zero when computing the gift tax value of the transfer. As a general rule, every retained interest but a qualified interest is assigned a value of zero for gift tax valuation purposes. In the case of a GRUT, a qualified interest is the right to receive (1) amounts that are payable annually or more frequently and are a fixed percentage (annuity payout rate) of the fair market value of the property in the trust (as revalued annually) or (2) a qualified remainder interest, that is, any non-contingent remainder interest if all other interests in the trust consist of qualified retained interests (qualified annuities).

The annuity must be a fixed percentage of the fair market value of the trust assets as revalued each year rather than merely the income produced by the assets in the trust. Although payments equal to an unchanging fixed percentage of the trust assets is the norm, final regulations define the term fixed percentage more liberally. They would permit the annuity payout rate to increase or decrease in a

systematic manner each year without adverse gift tax consequences. However, the annuity payout rate in any year may not be more than 120 percent of the prior year's payout rate.

For example, the trust could provide that the annuity payout rate in each subsequent year would equal 120 percent of the prior year's rate. If the initial annuity payout rate is 5%, it could increase to 6% in the second year, 7.2% in the third year, and so on. If the transferor retains the right each year to the greater of a fixed percentage of the value of trust assets as revalued annually or the trust income for a term of years, the annuity will still be a qualified annuity. However, the right to the trust income, if any, in excess of the fixed percentage of trust assets is valued at zero for gift tax purposes. Thus, the retained interest is valued for gift tax purposes as if it did not include any rights to excess income.

Finally, under the §2702 rules, the retained annuity interests value cannot exceed the actuarial value of an annuity for the shorter of the specified term or life, even if the trust instrument itself calls for payment of a term-certain annuity.

These more restrictive rules apply if the transfer is to or for the benefit of a member of the transferor's family and an interest in the trust is retained by the transferor or an applicable family member. A member of the transferor's family includes the transferor's spouse, ancestor, lineal descendent, an ancestor or lineal descendent of the spouse of the transferor, a brother or sister, and the spouse of any of these. A retained interest means a property interest held by the same individual both before and after the transfer in trust. An applicable family member is defined as the transferor's spouse, an ancestor of the transferor or an ancestor of the transferor's spouse, and the spouse of any such ancestor.

In summary, if the §2702 rules apply, the annuity must be for a fixed percentage of the value of the trust assets as revalued each year for a specified term. The annuity will be considered for a qualified fixed percentage if the scheduled payout rate in any year does not exceed 120 percent of the prior year's payout rate. The specified term may be the life of the annuitant, a fixed term, or the shorter of a fixed term or the life of the annuitant.

Regardless of the specified term, the annuity is valued for gift tax purposes as if it were for the shorter of a fixed term or the life of the annuitant. In other words, although the terms of the trust may specify that the annuity is to be paid for fixed and certain term of years, regardless of the survival of the annuitant, it must be valued for gift tax purposes as if it terminates upon the annuitant's death. Any other retained interest (other than a retention of a qualified remainder interest), including any rights to income or to a reversion of trust assets in the event of premature death, are valued at zero for gift tax purposes. Therefore, the gift tax value of the transfer is determined by subtracting the actuarial value of the qualified life-contingent unitrust annuity from the fair market value of the trust assets at the time the trust is created and funded.

If the transferor-annuitant survives the term of the GRUT, the assets transferred in trust are not included in the transferor's gross estate and escape estate taxation. Although there is no statutory or regulatory authority on the issue, some experts think the maximum amount the IRS could include is the lesser of the entire trust corpus or the amount of corpus required to provide the promised unitrust amount for the term (without invading principal).

This amount is computed by dividing the adjusted unitrust payout rate, for example, 5%, by the §7520 rate for the month of the transferor-annuitant's death, say 7.6%, to derive the proportion of the trust's corpus that is includible for estate tax purposes, in this instance, 65.79 percent. A logical but more aggressive and uncertain argument can be made that the amount included should not exceed the present value of the expected unitrust annuity payments at the scheduled adjusted payout rate over the

remaining term of the trust assuming the assets are invested at the §7520 rate. For example, if 3 years remain in the term of the trust, the present value of a unitrust annuity interest with a 5% adjusted payout rate is only 0.142625. In other words, only 14.2625 percent of the trust assets are actually economically required to fund the unitrust annuity payments over the remaining 3-year term. In any event, the risk of inclusion of trust assets should be covered by the purchase of life insurance owned on the transferor's life by the appropriate beneficiary.

Since the GRUT permits payment of both income and trust principal to satisfy the transferor-annuitant's unitrust annuity payments, the GRUT should be treated as a grantor trust for income tax purposes. This means the transferor-annuitant is taxed on income and realized gains on trust assets even if these amounts are greater than the trust's unitrust annuity payments. This further enhances this tool's effectiveness as a family wealth-shifting and estate-tax-saving device. The transferor-annuitant is effectively allowed to make gift-tax free gifts of the income taxes that are attributable to assets backing the remainder beneficiary's interest in the trust.

## Entering Data

1. **Transfer Date** – Enter the month and year (mm/yyyy).
2. **§7520 Rate** – Enter the rate that correlates to the transfer date.
3. **Calculation Type** – Select a type of trust.
4. **Principal** – Enter the fair market value of the assets placed into the trust.
5. **Grantor's Age (Nearest birthday)** – Enter the grantor's (transferor-annuitant's) current age as of the nearest birthday.
6. **Term of Trust** – Enter the number of years the trust will provide income to the grantor.
7. **Payment Period** – Select the number of payments that will be made each year to the beneficiary (Annual, Semiannual, Quarterly, Monthly, Quarterly, and Weekly).
8. **Annual Growth of Annuity Payments** – Enter the annual growth rate of annuity payments, if any (minimum –99.99%, maximum 20%).
9. **Months Valuation Precedes Payout:** – Enter the number of full months by which the valuation date (for the assets of the unitrust) precedes the first payout (or initial payment). The program will only allow valid entries according to which Payment Period was selected in the previous entry field. Growth is applied on the payment schedule before payments are calculated unless Months Valuation Precedes Payout is zero. The initial payment is not the first partial payment that sometimes occurs. It refers to the first normal payment or the relationship between the valuation date and the first payment as expressed in the instrument.
10. **Percentage Payout** – Enter the initial annuity payout rate (expressed as a percentage of the initial capital value of the trust).
11. **Annual Growth of Annuity Payments** – Enter the annual growth rate of annuity payments, if any (maximum 20%, minimum –99%).
12. **Annual Growth of Principal** – This value is used for the Economic Schedule only. Enter the annual growth of the principal (positive or negative value).
13. **Income Earned by Trust** – This value is used for the Economic Schedule only. Enter the percentage of income earned by the trust.
14. **With Reversion?** – Select the check box to show that the assets should revert to the grantor's estate in the event of the grantor's death during the term of the trust.
15. **Is Transfer To or For the Benefit of a Member of the Transferor's Family?** – Select the check box to show that the transfer is for the benefit of a member of the transferor's family.
16. **Is Interest in Trust Retained by Transferor or Applicable Family Member?** – Select the check box to show that an interest in trust property is retained by the transferor or an applicable family member.

## Results

The Summary Tab shows the gift tax values of the component interests of the trust, including the value of the remainder interest, the reversionary interest (if any), and the amount of the taxable gift as a result of the transfer in trust.

In addition, the calculation provides detailed analyses of the selected type of GRUT, showing required annuity factors, adjustment factors, and the subtraction method of computing the taxable gift value of the residual interest in trust. The Economic Schedule shows principal, percent growth, percent annual income, annual payment, and remainder for four years.

## IDIT Installment Sales

### *Main Menu Name: IDIT*

Shows the economic consequence of an installment sale of property to an income trust structured to avoid any gift tax. It also illustrates the gift tax advantage of this kind of installment sale over a comparable grantor retained annuity trust (GRAT). Like a grantor retained annuity trust (GRAT), an installment sale to an income trust may be an effective means for a wealthy client to transfer part of the future income or appreciation from a high-income or rapidly-appreciating asset with little or no gift or estate tax cost.

An income trust is a trust of which the grantor is considered the owner for federal income tax purposes. This means that the grantor must report, on the grantor's individual income tax return, all of the income, deductions, and credits of the trust, just as if the grantor was the owner of the trust grantor assets. The IRS has also ruled that a sale or other transactions between an income trust and the grantor does not result in any capital gain or loss, or any other tax consequences. The trust is ignored for federal income tax purposes and the grantor is still the owner.

### Entering Data

1. **Transfer Date** – Enter the month and year.
2. **§7520 Rate** – Enter the rate that correlates to the transfer date.
3. **Term of Payment** – Enter the number of years that the trust will provide income to the grantor.
4. **Gift in Trust** – Enter the value of the gift that is placed in the trust before the installment sale.
5. **Sale to Trust** – Enter the value of the property to be sold to the trust (i.e., the principal amount of the installment sale note.)
6. **Payment Periods** – Select the number of payments that will be made to the beneficiary during a normal full year.
7. **Payment Timing** – Select Begin or End to indicate when the payment should be made for the selected payment period. A Begin case is assumed to be the same as an End case with an additional payment made at the beginning of the period.
8. **Applicable Federal Rate** – Enter the annual applicable federal rate for the month that the transfer occurs (long-term, mid-term, or short-term). The long-term rate applies to installment sales with terms of more than nine years, the mid-term rate to terms of more than three years and not more than nine years, and the short-term rate to terms of not more than three years. When a note is an installment note, providing for payments of principal during the term of the note (i.e., the note is not interest-only), the “term” of the note for purposes of determining whether to apply the short-term, mid-term, or long-term rates is the “weighted average maturity” of the note as defined by Treas. Reg. Sec. 1.1273-1(e)(3). Visit our web site at <http://www.brentmark.com> for an updated list of AFR Rates.
9. **Income Earned by Trust** – Enter the annual yield for the principal of the trust, combining both capital growth and ordinary income. The maximum rate is 20%, and trust assets can be assumed to depreciate by entering a negative growth rate.
10. **Grantor's Age(s)** – Enter the Grantor's (transferor-annuitant's) current age as of his or her nearest birthday at the time of the transfer. Enter 0 for the second age if there is not a second age being used.



**Results**

The Summary Tab displays the amounts of the Future Value of Remainder, the Payment on the Note, the Gift Tax Value of a GRAT, and the Gift Tax Value of an IDIT. The program calculates an amortized annual loan payment based on the amount of the sale, the term of the sale, and the applicable federal rate entered by the user.

The future value of the trust is then calculated by adding the income or growth of the trust assets each year, and subtracting the installment payment from the trust each year. The calculation begins with the sum of the initial funding of the trust and the property sold to the trust. The percentage yield is applied to that value to determine the income or growth of the trust that year. The installment payment is subtracted, and a value calculated for the trust at the end of the year. The rows for each year after that begin with the ending balance from the previous row. The final value of the last row is the projected value that should pass to the beneficiaries, free of federal estate and gift tax.

Because the transaction is a sale for fair market value at a market rate of interest, there is no gift for federal gift tax purposes. For purposes of comparison, the program also shows the value of the transfer for federal gift tax purposes if the property subject to the installment sale were not sold to the trust, but instead contributed to a comparable GRAT (i.e., a GRAT with the same assets as the proposed grantor trust following the installment sale, and paying an annuity to the seller/grantor equal to the amortized installment sale payments for a period equal to the term of the installment sale note). The gift tax value of the remainder interest in the GRAT is calculated as a trust for the shorter of the term or the life of the grantor/seller, in accordance with Example 5 of Reg. Sec. 25-2702-3(e). (Rev. Rul. 77-454 should not be relevant. It has not been applied, because the annuity is based on an applicable federal rate that should always be less than the Section 7520 interest rate.)

The Table Tab displays the Beginning Principal, Growth of Trust, Payment on Note, and Ending Principal for the term of the trust.

## Dynasty Trust

### *Main Menu Name: Dynasty*

This calculation illustrates the wealth transfer power of combining several tax techniques into a single trust, here called a defective dynasty trust.

The tax techniques that are combined and illustrated include:

- The sale to a “defective” trust (a trust of which the grantor is treated as the “owner” for income tax purposes, but not for estate, gift, or generation-skipping transfer tax purposes), so that no gain or loss is recognized on the sale, but the future appreciation of the asset sold is excluded from the seller/grantor’s estate.
- The sale of a minority interest in a family limited partnership or other entity, so that the purchase price can be discounted below the proportionate fair market value of the partnership assets, even though the beneficiaries of the trust should ultimately realize that full market value when the partnership is liquidated.
- Generation-skipping, and avoiding death taxes in future generations, by creating a trust which lasts the period allowed by the rule against perpetuities.
- Leveraging the accumulated trust income through the purchase of life insurance by the trust.

### **“Defective” Trust**

As explained above, a “defective” trust is a trust in which the grantor (or in certain cases, the beneficiary) is treated as the “owner” of the trust for income tax purposes, but not for estate, gift, or generation-skipping transfer tax purposes. This means that the grantor is taxed on the trust income and gets the benefit of all the deductions and credits attributable to the trust. IRC Section 671. Many practitioners believe that one of the benefits of a trust in which the grantor pays the income tax is that the payment of the tax is the equivalent of a tax-free gift to the trust to the extent no reimbursement is made (unless the trust instrument or state law requires reimbursement to the grantor from the trust). This benefit is important if the trust is purchasing life insurance because the trust can grow free of income tax and be able to pay larger premiums.

### **The Leverage of Market Discounts**

Another technique used by many practitioners is the intra-family transfer of closely held business interests, family limited partnerships, and other types of fractional or minority interests for which the fair market value (determined by reference to a hypothetical willing buyer and willing seller in accordance with Treasury regulations and court rulings) will be less than the proportionate value of the underlying assets owned by the corporation or partnership, due to discounts for lack of control and lack of marketability. By selling a discounted minority interest to a defective trust, the grantor can increase the “leverage” of the sale, providing additional value to the beneficiaries without gift tax.

### **Sale to a “Defective” Trust - How the Technique Works**

The first step is for the grantor to make a gift to the trust as initial “seed money” or equity so that the trust is not under-capitalized and the transaction is a real sale and not a “sham.” (If the sale is too highly leveraged, the seller is totally dependent on the asset itself for the payment of the purchase

price, would could lead the IRS and the courts to conclude that the transaction was not really a sale at all.) The grantor subsequently sells interests in a limited partnership (or other entity) to the trust in exchange for an interest-only promissory note with a balloon payment at the end of the term. The sale is income tax free because the trust is “defective” for income tax purposes. (See Rev. Rul. 85-13.) The interest rate for the sale is a market rate of interest determined under IRC Section 1274(d). Because the minority interest transferred represents a discounted value from the proportionate share of the business or assets owned by the partnership or other entity, the income from the minority interests should be higher than the income from other assets with the same fair market value. If the trust is “defective” and does not pay income tax, the income will be able to accumulate more rapidly. The difference between the trust income and the interest on the promissory note may therefore accumulate tax-free for the beneficiaries of the “defective” trust.

### **Why Use a Dynasty Trust**

A dynasty trust is an irrevocable trust drafted to last for multiple generations without any estate, gift or generation-skipping transfer taxes at the death of the grantor’s children and in some cases without any such taxes at the death of lower generations as well. Unlike most trusts which require distributions to be made to the children at certain ages, the dynasty trust instead gives the children and other descendants the use and control over the trust property as trustee upon reaching the age at which most standard trusts would otherwise distribute the trust property to the beneficiaries free of trust. This gives the beneficiaries control over and enjoyment from the trust assets as if they owned the property outright, but without causing inclusion in their taxable estates and without subjecting their property to their personal creditors, including ex-spouses.

The federal estate tax applies to the net estate of a decedent at death, and federal estate tax rates have been as high as 55% for estates of \$3,000,000 or more, with an additional 5% payable (or a total of 60%) for estates between \$10,000,000 and \$17,184,000, but are scheduled to decline to 50% in 2002 and by 1% annual decrements to 45% in 2007, and the estate tax is supposed to be repealed in 2010. In order to prevent the avoidance of the estate tax through long-term trusts, Congress also imposed a generation-skipping transfer tax equal to the maximum federal estate tax rate on each generation-skipping transfer, payable from a generation-skipping trust at the death of each generation. However, there is a generation-skipping tax exemption for each person, and it is possible to “leverage that exemption through life insurance, so that a multi-generation dynasty trust can be created that can benefit each generation free of federal estate tax and generation-skipping tax.”

A major limitation on multi-generational dynasty trusts is the traditional “rule against perpetuities,” which states that each trust must “vest (or terminate for tax purposes) twenty-one years after the deaths of all lives in being when the trust was created.” That means that a trust can always last at least until all of the grandchildren are twenty-one, and careful drafting can usually allow a trust to last 100 years or more without violating the rule against perpetuities.

### **Perpetual Trusts**

The choice of state law to apply to the dynasty trust is a decision which can affect the wealth of the grantor’s descendants for many generations. Several states (twelve as of 6/1/00) have repealed or modified the common law “rule against perpetuities” to allow trusts to continue forever without any additional gift, estate or generation-skipping transfer taxes. (In the states which still apply the rule against perpetuities, the trust must usually terminate and distribute the trust assets twenty-one years after the grantor and others living when the trust was created have died. Once the trust has terminated, the assets become subject to estate and gifts taxes again.) By extending the term of the trust, the grantor can delay (or avoid altogether) the imposition of any estate tax on the principal and accumulated income of the trust.

## Choosing a State Situs

In order to get the benefit of the favorable trust and tax laws of South Dakota, Delaware, or other states, it is usually necessary to have at least one trustee residing in that state. To provide continuity of management, and insure that the resident trust will not die or move, it may be advisable to use a bank or trust company as a trustee. (One or more beneficiaries may also be co-trustees and may be given the power to remove and replace the corporate trustee without adverse income, estate, or gift tax consequences. It is also possible for the grantor to retain this power under the holding of Rev. Rul. 95-58.)

## Why this Technique Is Invaluable as a Life Insurance Tool

Estate taxes are due within nine months of the death of a single individual or the second to die of a married couple. In almost all cases, life insurance is used to provide the liquidity to pay the taxes without having to sell the estate assets at low values. Life insurance proceeds are income tax free (subject to exceptions), but not estate tax free. In order to make it estate tax free, the life insurance should be purchased by an irrevocable life insurance trust. Most life insurance trusts are structured as Crummey trusts (named after the case by that name) so that transfers to the trust qualify for the gift tax annual exclusion. For larger estates, however, there often aren't enough Crummey beneficiaries to pay the premiums without making taxable gifts. This often results in the client not purchasing enough insurance to fund the estate tax (or other obligation). Since the sale to a "defective" trust can create such a large cash flow, significant insurance premiums can be supported by the trust assets. In addition, the "defective" trust can also be used to purchase an existing policy from either the insured or an existing life insurance trust without violating the transfer for value rules (IRC Section 101(a)(2)) and without causing estate inclusion under the three-year rule (IRC Section 2035).

In almost all but the largest estates, the installment sale technique will provide sufficient cash flow to purchase more insurance than the client needs. This is because the technique leverages the estate, gift and generation-skipping transfer taxes so much. If this result is higher than necessary, then the options are to either gift and sell less to the dynasty trust or to use part of the trust income for life insurance and part for other investments.

These dynasty trust calculations and explanations are based on concepts and illustrations created by attorney Steven J. Oshins, Las Vegas, Nevada, and are reproduced here with his permission.

## Entering Data

1. **FMV of Gift to Dynasty Trust** – Enter the amount of the initial "seed money" gift to the trust. (Many practitioners believe that this gift should be at least 10% of the value of the interests to be sold to the trust.)
2. **Years Between Generations** – Enter the number of years each generation can be expected to benefit from the trust, representing the average period between the deaths of the members of each generation. (Twenty-five years is the length of generations assumed by the Internal Revenue Code.)
3. **Pre-Discount Value of Limited Partnership Interests Sold to Dynasty Trust** – Enter the pre-discount value of the limited partnership (or other entity) interests to be sold to the trust
4. **Discount Applied to Limited Partnership Interests** – Enter the total percentage discounts (minority, marketability, or otherwise) that will be applied in valuing the interests in the partnership or other entity to be sold to the trust. (The face value of the installment note is the pre-discount value of the limited partnership interest, reduced by the discount entered.)
5. **Term of Note** – Enter the term of the installment sale note, in years. (The term should not be longer than the life expectancy of the grantor.)

6. **Applicable Federal Rate** – Enter a rate to override the stored §7520 rate. The applicable federal rate is the market rate of interest that will be applied to the note. The short-term rate is for notes of not more than three years, the mid-term rate is for notes of more than three years but not more than nine years, and the long-term rate is for notes of more than nine years. These rates are published monthly by the Internal Revenue Service and can be found in the Internal Revenue Bulletin or at <http://www.brentmark.com>.
7. **Down Payment on the Promissory Note** – Enter the amount of any down payment to be made in the first year of the trust.
8. **Estate and Gift Tax Rate** – Enter the average rate for all the death taxes that would otherwise apply at the grantor's death. (The same rate will also be applied to the estates of future generations.)
9. **Net Growth During Grantor's Lifetime** – Enter an assumed annual rate of income or long-term capital growth to be used to calculate the increases in the value of the trust during the grantor's lifetime. Many practitioners believe that the grantor can pay the federal income tax for a "defective" grantor trust without payment of any gift taxes, in which case the rate of income or growth should be a before-tax rate.)
10. **Net Growth After Grantor's Death** – Enter an assumed annual rate of income or capital growth, after taxes, to be used to calculate future values of both the dynasty trust and family wealth outside of a dynasty trust. Following the grantor's death, the trust will not be a grantor trust, and will be required to pay federal income tax on its accumulated income and gains, so this rate should be an after-tax rate. (Although it is possible to accumulate income in a dynasty trust, it is unrealistic to assume that a trust will be created and administered without ever providing any benefits to future generations, so the growth of assets should be net of a reasonable income for beneficiaries.)
11. **Premium Per \$1,000,000 of Death Benefit (if any)** – Enter the annual premium that would be paid for \$1,000,000 of insurance on the grantor's life. (Enter zero to skip the life insurance calculation.)

## Results

The summary shows the net amount in the trust after the end of the term of the note, based on the discount, income, interest rates, and other information entered. The program computes the amount that can be removed from the grantor's estate by leveraging a gift to a defective trust using an installment sale of an asset subject to a valuation discount.

The Payment Schedule shows a year-by-year calculation of the note payments and resulting amount removed from the grantor's estate.

The Insurance Schedule shows the initial net income remaining in the trust after the payment of the interest on the note and the amount of life insurance that could be purchased with that annual income as a premium payment.

The Perpetual Dynasty Trust calculations are displayed in four columns and six rows. The six rows show the trust fund (or inheritance) remaining after taxes (if any) at the death of the grantor and at the end of each of the five generations after the grantor. The four columns compare the results of a one generation trust (ending at the grantor's death), a two generation trust (ending after the death of the grantor's children), a three generation trust (ending after the death of the grantor's grandchildren), and a perpetual trust (never ending, and so continuing through all five generations).

The value of the dynasty trust at the grantor's death is the same value shown in the summary of results. The value at the end of the first generation is the initial value of the trust multiplied by the assumed growth rate, compounded annually for the assumed number of years for the generation. The value of the dynasty trust for the second (and succeeding) generations is the value of the trust at the end of the preceding generation multiplied by the same growth rate compounded for the same number of years assumed for each generation.

The calculation of the value of assets after the end of the trust is similar to the growth calculations for the dynasty trust. The difference is that the inheritance of each generation is assumed to be reduced by the death taxes calculated in accordance with the rate of tax entered as an input. The net amount passing to the next generation is then assumed to grow in value, and be subject to tax again at the end of that next generation.

The potential benefit of a multi-generational dynasty trust can be seen by comparing the values (and taxes) in the different columns.

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## Split Interest

### *Main Menu Name: Split*

Calculates the amount each party must pay when property is split between them and one party acquires a life income interest in the assets while the other acquires a remainder interest. It also calculates the amount each party receives upon the sale of the property and the potential income and estate tax savings.

When two parties agree to a split interest purchase arrangement, one party purchases an asset and receives a life interest in the asset while the other party receives a remainder interest in the property. Each party contributes a proportionate share to the cost based on IRS regulations that determine the actuarial value of a life estate and remainder interest.

For example, a father and son purchase land with a value of \$100,000. The father is 55; therefore, assuming a Sec. 7520 rate of 12%, his life income interest is equal to 86.052% of the property (\$86,052). He will pay that amount toward the split interest, and his son will contribute the remaining \$13,948.

Under the split interest arrangement, the father (term tenant) owns the purchased property and retains any income it produces for the remaining years of his life. The father will most likely receive more income under this arrangement than he would if he had invested his contribution to purchase the same type of asset. For example, if the \$100,000 property produces a 10% return, he will receive \$10,000 a year that is more than if he had received 10% of his \$86,052 contribution. The life tenant is taxed on any income received.

If the two split interest parties are unrelated or beyond the IRC definition of “applicable family members,” several estate tax objectives can be accomplished. First, if government tables are used to determine each party’s contributions, no gift tax is incurred on any interest produced.

Additionally, the life estate ends when the life tenant dies; therefore, no transfer can occur. Without a transfer, no federal estate tax is applicable. If the asset appreciates between the time of purchase and the life tenant's death, any appreciation will also be excluded from the life income owner’s estate.

The remainderman receives no increase in basis when the life tenant’s death occurs (the remainderman’s basis is the cost of his remainder interest). Instead, the remainderman’s gain comes from the sale of the property after the death of the life tenant.

There are drawbacks to the split interest purchase. For example, the transaction may cause immediate gift tax implications (under Code Sec. 2702 of Chapter 14) if it is between family members. Also, the IRS may question whether the remainderman actually provided his part of the purchase. If the remainderman can not produce a source for his share of the purchase (especially if he’s not an adult), the IRS may assume the remainder interest was a gift from the life tenant. If the IRS makes this conclusion, estate tax inclusion under IRC 2036 will result.

These problems are avoided if the split interest transaction follows these guidelines:

- The asset title reflects the correct split purchase division.
- Each party provides their appropriate portion.
- Portions are determined using IRS tables valuing life and remainder interest.
- Each party documents the source of the portion paid.
- The transaction is put into writing.

If the parties so choose, they can end the split interest purchase arrangement by selling the asset and dividing the proceeds in accordance with each party's actuarial interest at the time the asset is sold. To determine how much each party receives, enter the life tenant's age and the property value at the time the asset is sold.

### Entering Data

1. **Transfer Date** – Enter the month and year (mm/yyyy).
2. **§7520 Rate** – Enter the rate that correlates to the transfer date.
3. **Age of Life Tenant (Client)** – Enter the age of the life tenant (client) at the time the property is purchased (or sold).
4. **Number of Years Until Sale** – Enter the number of years until the property is sold. If you choose to have the program use the life tenant's remaining life expectancy, this entry field will be disabled.
5. **Use Life Expectancy** – Select the check box to use tenant's remaining life expectancy (taken from Table V (§1.72)).
6. **Value of Property** – Enter the value of the property at the time it was purchased (or sold).
7. **After-Tax Growth Rate** – Enter the growth rate after the effect of taxes is factored out.
8. **Assumed Value at Sale** – Enter the value you assume the property will have when sold at the life tenant's death. This entry field will not be available if you choose to use the computed value.
9. **Use Computed Value** – Select the check box to use the value calculated by the program (Value of Property grown by the entered After-Tax growth).
10. **Combined Fed/State Tax Bracket** – Enter the combined federal and state tax bracket.

### Results

The program shows the amount that each party must contribute in a split interest purchase, or the amount each party receives in a sale of property purchased in a split interest arrangement. The life tenant must provide the amount indicated at Value of Life Interest on the results screen, and the remainder interest holder must provide the amount indicated at Value of Remainder Interest. The results also show the amount of income that will be produced annually (Remainderman's Return on Investment) by the property purchased.



# Charitable

## Exhaustion Test

The Charitable Lead Annuity Trust and Charitable Remainder Annuity Trust both need to perform an exhaustion test. This test can be performed using one of two different methods:

- **The IRS Annuity Factor Method:** This is the method which appears to have been used by the IRS in §25.7520-3(b)(2)(v), Example 5. It uses published annuity factors to determine when the trust exhausts, and what the payment is in the last period of the trust.
- **The Exact Method:** This method creates the schedule of payments based on the assumption that the trust will grow at a rate equal to the 7520 rate. From the schedule, it is able to determine exactly when the trust exhausts and how much the final payment is.

The program defaults to using the IRS Annuity Factor method to best reflect §25.7520-3(b)(2)(v), Example 5. See the Reference section to learn more about §25.7520-3(b)(2)(v), Example 5.

## Charitable Remainder Annuity Trust

### *Main Menu Name: CRAT*

This calculation determines the value of the annuity (nondeductible) and the value of the charitable remainder interest (deductible) for a gift made through a charitable remainder annuity trust.

When a charitable remainder annuity trust is established, a gift of cash or property is made to an irrevocable trust, and the donor (and/or another non-charitable beneficiary) retains an annuity interest in the property for a specified number of years or for the life or lives of the noncharitable beneficiaries. At the end of the term, the qualified charity specified in the trust document receives the property in the trust. If the number of lives is greater than one, then the length of the economic schedule will be determined by the joint life expectancy of the first two ages provided by the user. Single life cases will use the single life expectancy.

For calculations involving a term, the length of the economic schedule is limited to that term. Otherwise, the economic schedule illustrates the trust for life expectancy.

Most gifts made to a charitable remainder annuity trust qualify for income and gift tax charitable deductions (or in some cases an estate tax charitable deduction). A charitable deduction is permitted for the remainder interest gift only if the trust meets certain criteria.

A trust qualifies as a charitable remainder annuity trust if the following conditions are met:

- The trust pays a specified sum to at least one non-charitable beneficiary who is living when the trust is created. Sums are paid annually, semiannually, quarterly, monthly, or weekly.
- The sum paid annually must also be at least 5%, but less than 50% of the initial net fair market value of the property placed in the trust. The charity's interest at inception also must be worth at least 10% of the value transferred to the trust.
- The sum is payable each year for a specified number of years (no more than 20) or for the life or lives of the noncharitable beneficiaries.
- No sum is paid to anyone other than the specified non-charitable beneficiary and a qualified charitable organization.
- When the specified term ends, the remainder interest is transferred to a qualified charity or is retained by the trust for the use of the qualified charity.
- The Internal Revenue Service has also ruled that a trust is not a charitable remainder annuity trust if there is a greater than 5% chance that the trust fund will be exhausted before the trust ends.

The annuity paid must be a specified amount expressed in terms of a dollar amount (e.g., each non-charitable beneficiary receives \$500 a month) or in terms of a fraction or percentage of the initial fair market value of the property contributed to the trust (e.g., beneficiary receives 5% each year for the rest of his life).

The grantor will receive an income tax deduction which is permitted immediately for the present value of the remainder interest that will ultimately transfer to the qualified charity. Government regulations determine this amount which is essentially calculated by subtracting the present value of the annuity from the fair market value of the property and/or cash placed in the trust. The balance is the amount that the grantor can deduct when the grantor contributes the property to the trust.

Note: The economic schedule will end if the trust is depleted of funds prior to the end of the schedule.

## Entering Data

1. **Trust Type** – Select a type of trust.
2. **Transfer Date** – Enter the month and year (mm/yyyy).
3. **§7520 Rate** – Enter the rate that correlates to the transfer date.
4. **FMV of Trust** – Enter the initial Fair Market Value (FMV) of the assets placed in the trust when established.
5. **Growth of Trust** – Enter the growth percentage of the trust.
6. **Term** – If you chose a term or shorter trust, enter the number of years that the trust will last.
7. **Percentage Payout/Annual Payout** – Enter the payout (percentage) that will go to the beneficiary during the life of the trust. This rate must be no less than 5% and no more than 50% (valid inputs are 5% to 50%). Or, enter the amount (dollar) that will go to the beneficiary during the life of the trust. This amount must be at least 5% and not greater than 50% of the trust (valid inputs are \$101 and higher).
8. **Payment Period** – Select the number of payments that will be made during a normal full year to the beneficiary (Annual, Semiannual, Quarterly, Monthly, and Weekly).
9. **Payment Timing** – Select when the payment is made during the selected payment period (Begin or End). A Begin case is assumed to be the same as an End case with an additional payment made at the beginning of the period.
10. **Lives** – If you choose a life or shorter trust, enter the number of lives (up to five) used to determine the charitable deduction.
11. **Ages** – Enter the age(s) of the person(s) whose life is being used to measure the term of the trust as of the nearest birthday. You may enter up to five ages (Valid ages are 0-109.)
12. **Exhaustion Method** – Choose the IRS method or the Exact method to perform the exhaustion test.
13. **Optimize** – Click this button to have the program calculate the highest payout rate that passes the 10% test for the AFR you select. This feature is useful in creating a new trust if you have not designed one before.
14. **Print Economic Schedule?** – Click Yes to include the economic schedule on the printed report.

## Results

The Summary Tab displays the value of the annuity (nondeductible) and the value of the charitable remainder interest (deductible) generated from a gift of a term of years charitable remainder annuity trust. To calculate these values, the calculation first determines the amount of the annuity and the appropriate factor for the term specified at the Payment Year input. It then uses the payment period (annual, semi-annual, quarterly, monthly, or weekly) and payment occurrence (beginning or end) to calculate and display the exact amount of charitable deduction allowed. The deduction is shown as a dollar amount and as a percentage of the amount transferred to the trust.

If the transfer date is greater than 7/97 and the Charitable Remainder is less than 10% of the initial FMV, a message appears stating “Fails the 10% minimum Charitable Benefit Test.” If the transfer date is greater than 7/97, and the Charitable Remainder is less than 10% of the initial FMV, a message appears stating “Does not pass the 10% Test. (Donor’s Deduction is set to 0.)” When this message appears, the result entry Donor’s Deduction as Percentage of Amount Transferred appears on the Summary tab. There are actually three error messages regarding the 10% test that can appear. This is because of the fact that with charitable remainder trusts, the user has the option of using an AFR from the transfer month or from one of the previous two months. The wording of the Taxpayer Relief Act of 1997 does not make it clear which AFR should be used for valuing the remainder interest when performing the 10% test. The program performs the test using both the transfer month’s

AFR and using the AFR the user selected, and informs the user if either (or both) of these tests are failed.

The program uses one of two methods to perform the exhaustion test on the trust.

**Note:** The **Taxpayer Relief Act of 1997** added a requirement that the remainder interest be at least 10% of the initial fair market value of all the property placed in trusts to charitable remainder trusts. The 10% Minimum Charitable Benefit Test applies to transfers made after 7/28/97.

The program also uses the 5% probability test of Revenue Ruling 77-374, 1977-2 CB 329 in its calculations when the dollar payout is high enough for the ruling to apply. In its calculation results, the program determines whether or not the charitable deduction is allowable under the ruling.

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## Charitable Remainder Unitrust

### *Main Menu Name: CRUT*

This calculation determines the donor's deduction for a contribution to a charitable remainder unitrust. Specify whether the trust lasts for a term of years, a single life expectancy, or a joint life expectancy (up to five ages). It also calculates the deduction as a percentage of the amount transferred.

When a charitable remainder unitrust is established, a donor transfers cash and/or property to an irrevocable trust but retains (either for himself or for one or more non-charitable beneficiaries) a variable annuity (payments that can vary in amount, but are a fixed percentage) from that trust. At the end of a specified term, or upon the death of the beneficiary (or beneficiaries, and the donor and the donor's spouse can be the beneficiaries), the remainder interest in the property passes to the charity the donor has specified. If the number of lives is greater than one, then the length of the economic schedule will be determined by the joint life expectancy of the first two ages provided by the user. Single life cases will use the single life expectancy.

For calculations involving a term, the length of the economic schedule is limited to that term. Otherwise, the economic schedule illustrates the trust for life expectancy.

The principal difference between a charitable remainder unitrust and a charitable remainder annuity trust is that a unitrust pays a varying annuity. In other words, the amount paid is likely to change each year. The payable amount is based on annual fluctuations in the value of the trust's property. As it goes up, so does the annuity paid each year. If it drops in value, so will the annuity.

A gift to a charitable remainder unitrust will qualify for income and gift tax charitable deductions (or an estate tax charitable deduction) only if the following conditions are met:

- A fixed percentage (not less than 5% nor more than 50%) of the net fair market value of the assets is paid to one or more non-charitable beneficiaries who are living when the unitrust is established. The charity's actuarial interest must be at least 10% of any assets transferred to the trust.
- The unitrust assets must be revalued each year, and the fixed percentage amount must be paid at least once a year for the term of the trust, which must be a fixed period of 20 years or less, or must be until the death of the noncharitable beneficiaries, all of whom must be living at the beginning of the trust.
- No sum can be paid except the fixed percentage during the term of the trust and at the end of the term of the trust, the entire balance of the trust's assets must be paid to one or more qualified charities.

The donor receives an immediate income tax deduction for the present value of the remainder interest that will pass to the charity at the end of the term.

Because a charitable remainder unitrust is exempt from federal income tax (the income and gains of the trust are only taxed when they are distributed to the noncharitable beneficiaries as part of the fixed percentage of trust assets distributed each year), they are frequently used to defer income tax on gains about to be realized. For example, if a donor has an appreciated asset that is about to be sold, the donor can give the asset to a charitable remainder unitrust, reserving the right to receive a fixed percentage of the value of the trust for life, and for the life of the donor's spouse as well, and the asset can then be sold by the trust and the proceeds of sale reinvested without payment of any federal

income tax on capital gains. The capital gains will be taxable to the donor (or the donor's spouse) only as they are distributed to the donor as part of the annual distributions from the trust.

A variation of the CRUT (which pays a fixed percentage of the value of the trust assets, regardless of income) is the net-income-with-makeup CRUT, or "NIMCRUT," which pays either the fixed percentage or the income actually received by the trust, whichever is less. However, if the income is less than the fixed percentage, the deficiency can be paid in a future year, as soon as the trust has income, which exceeds the fixed percentage. An additional variation is a "flip" unitrust, which is a trust that changes from a NIMCRUT to a regular CRUT upon the occurrence of a specific event, such as the sale of a specific asset that was contributed to the trust and was not expected to produce much income. However, both NIMCRUTs and "flip" CRUTs are valued in the same way as a regular CRUT for the purpose of determining the income, estate, and gift tax charitable deduction.

Note: The economic schedule will end if the trust is depleted of funds prior to the end of the schedule.

### Entering Data

1. **Trust Type** – Select a type of trust.
2. **Transfer Date** – Enter the month and year (mm/yyyy).
3. **§7520 Rate** – Enter the rate that correlates to the transfer date.
4. **FMV of Trust** – Enter the initial Fair Market Value (FMV) of the assets placed in the trust when established.
5. **Growth of Trust** – Enter the growth percentage of the trust.
6. **Term** – If you chose a term or shorter trust, enter the number of years that the trust will last.
7. **Percentage Payout** – Enter the payout (percentage) that will go to the beneficiary during the life of the trust. This rate must be no less than 5% and no more than 50%.
8. **Payment Period** – Select the number of payments that will be made during a normal full year to the beneficiary (Annual, Semiannual, Quarterly, Monthly, and Weekly).
9. **Months Valuation Precedes Payout** – Enter the number of full months by which the valuation date (for the assets of the unitrust) precedes the first payout in the first full taxable year of the trust (not the short first year). The program will only allow valid input values according to which Payment Period was selected in the previous entry field. Growth is applied on the payment schedule before payments are calculated unless Months Valuation Precedes Payout is zero. This does not pertain to the planning period before the trust goes into effect.
10. **Lives** – If you choose a life or shorter trust, enter the number of lives (up to five) used to determine the charitable deduction.
11. **Ages** – Enter the ages of the persons whose lives are being used to measure the term of the trust as of the nearest birthday. You may enter up to five ages (Valid ages are 0-109.)
12. **Optimize** – Click this button to have the program calculate the highest payout rate that passes the 10% test for the AFR you select. This feature is useful in creating a new trust if you have not designed one before.
13. **Print Economic Schedule?** – Click Yes to include the economic schedule on the printed report.

## Results

The Summary Tab displays the deduction permitted to a donor who establishes a charitable remainder unitrust. The deduction is shown both as a dollar amount and as a percentage of the amount transferred. The results also show the trust's payout sequence factor and adjusted payout rate, along with the Remainder factor.

If the transfer date is greater than 7/97 and the Charitable Remainder is less than 10% of the initial FMV, a message appears stating "Fails the 10% minimum Charitable Benefit Test." If the transfer date is greater than 7/97, and the Charitable Remainder is less than 10% of the initial FMV, a message appears stating "Does not pass the 10% Test. (Donor's Deduction is set to 0)." When this message appears, the result entry Donor's Deduction as Percentage of Amount Transferred appears on the Summary tab.

**Note:** The **Taxpayer Relief Act of 1997** added a requirement that the remainder interest be at least 10% of the initial fair market value of all the property placed in trusts to charitable remainder trusts. The 10% Minimum Charitable Benefit Test applies to transfers made after 7/28/97.

## Charitable Lead Annuity Trust

### *Main Menu Name: CLAT*

Determines the value of the deduction for a transfer of cash or other property to a charitable lead annuity trust. It also shows the future interest gift made to the non-charitable remainderman. It also shows the percentage of principal that is deductible for gift tax purposes.

When a charitable lead trust is established, a donor transfers cash or other assets to a trust, and a charity receives payments from the trust. Assets in the trust transfer to a non-charitable remainderman (usually a child or grandchild).

Individuals establishing a lead trust receive an immediate income tax deduction and a lower gift tax for transferring the trust assets to the remainderman. A lead trust may also be established at death as a form of bequest. Both corporations and individuals may establish lead trusts.

If the number of lives is greater than one, then the length of the economic schedule will be determined by the joint life expectancy of the first two ages provided by the user. Single life cases will use the single life expectancy.

For calculations involving a term, the length of the economic schedule is limited to that term. Otherwise, the economic schedule illustrates the trust for life expectancy.

A lead annuity trust pays a specified percentage of the initial trust value to one or more charities.

Income, gift, and estate tax deductions are only permitted for transfers to lead trusts if one of the following requirements is met:

- The income interest is paid out in the form of a guaranteed annuity.
- The income interest is a fixed percentage of the fair market value of the trust's assets (calculated annually) and is paid at least annually.

Income tax rules also require the donor to be the owner of the income earned by the trust. In other words, the donor receives an immediate, large income tax deduction, but in later years, must report the income of the trust as it is received. Consequently, the typical lead trust produces little if any net income tax deductions since future income taxes are likely to counterbalance the initial deduction.

Despite future tax obligations, however, the charitable lead trust can be beneficial. For example, if a donor is in a high-income year, but in future years is expecting a drop in income, his tax bracket will most likely also drop. Consequently, deductions are received in a high bracket year, and taxes are paid in low bracket years. This premise also applies if a drop in income tax rates is expected. Another advantage of the charitable lead trust is that it allows a discounted gift to family members. Under present law, the value of a gift is set at the time the gift is complete. The family member remainderman must wait for the charity's term to expire; therefore, the value of that remainderman interest is discounted for the cost of waiting. In other words, the cost of making a gift is lowered because the value of the gift is decreased by the value of the income interest donated to charity.

**Note:** This rule does not apply if the trustee sells the property after the client's death.

When the assets in the trust transfer to the remainderman, any appreciation on the value of the assets is free of estate taxation in the client's estate.



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Note: The economic schedule will end if the trust is depleted of funds prior to the end of the schedule.

### Entering Data

1. **Trust Type** – Select a type of trust.
2. **Transfer Date** – Enter the month and year (mm/yyyy).
3. **§7520 Rate** – Enter the rate that correlates to the transfer date.
4. **FMV of Trust** – Enter the initial Fair Market Value (FMV) of the assets placed in the trust when established.
5. **Growth of Trust** – Enter the growth percentage of the trust.
6. **Term** – Enter the number of years that the trust will last.
7. **Percentage Payout** – Enter the projected payout that will go to the charity during the life of the trust. (Valid entries: 0%- 100%)
8. **Payment Period** – Select the number of payments that will be made during a normal full year to the beneficiary (Annual, Semiannual, Quarterly, Monthly, and Weekly).
9. **Payment Timing** – Select when the payment is made during the selected payment period (Begin or End). A Begin case is assumed to be the same as an End case with an additional payment made at the beginning of the period.
10. **Lives** – If you choose a life or shorter trust, enter the number of lives (up to five) used to determine the charitable deduction.
11. **Ages** – Enter the age(s) of the person(s) whose life is being used to measure the term of the trust as of the nearest birthday. You may enter up to five ages (Valid ages are 0-109.)
12. **Exhaustion Method** – Choose the IRS method or the Exact method to perform the exhaustion test.
13. **0 Remainder** – Click on this button to have the program calculate the payout percentage that will result in a remainder value of zero for a term trust. This button will not appear if the calculation trust type is Life or Shorter.
14. **Print Economic Schedule?** – Click Yes to include the economic schedule on the printed report.

### Results

The Summary Tab displays the deduction allowed to a donor for a transfer of cash or other property to a charitable lead annuity trust. Also shown is the future interest gift that will pass to the non-charitable remainderman. The deduction allowed is calculated both as a dollar amount and as a percentage of the amount transferred. The trust's payout frequency factor, payout rate, and the annuity factor are also shown.

The program uses one of two methods to perform the exhaustion test on the trust.

## Charitable Lead Unitrust

### *Main Menu Name: CLUT*

Determines the value of the deduction for a transfer of cash or other property to a charitable lead unitrust trust and shows the future interest gift made to the non-charitable remainderman. It also shows the percentage of principal that is deductible for gift tax purposes.

When a term-of-years charitable lead trust is established, a donor transfers cash or other assets to a trust, and a charity receives payments from the trust. Assets in the trust transfer to a non-charitable remainderman (usually a child or grandchild).

Individuals establishing a lead trust receive an immediate income tax deduction and a lower gift tax for transferring the trust assets to the remainderman. A lead trust may also be established at death as a form of bequest. Both corporations and individuals may establish lead trusts.

A lead unitrust pays a specified percentage of the current trust value (as revalued each year) to one or more charities.

If the number of lives is greater than one, then the length of the economic schedule will be determined by the joint life expectancy of the first two ages provided by the user. Single life cases will use the single life expectancy.

For calculations involving a term, the length of the economic schedule is limited to that term. Otherwise, the economic schedule illustrates the trust for life expectancy.

Income, gift, and estate tax deductions are only permitted for transfers to lead trusts if one of the following requirements is met:

- The income interest is paid out in the form of a guaranteed annuity.
- The income interest is a fixed percentage of the fair market value of the trust's assets (calculated annually) and is paid at least annually.

Income tax rules also require the donor to be the owner of the income earned by the trust. In other words, the donor receives an immediate, large income tax deduction, but in later years, must report the income of the trust as it is received. Consequently, the typical lead trust produces little if any net income tax deductions since future income taxes are likely to counterbalance the initial deduction.

Despite future tax obligations, however, the charitable lead trust can be beneficial. For example, if a donor is in a high-income year, but in future years is expecting a drop in income, his tax bracket will most likely also drop. As a result, deductions are received in a high bracket year, and taxes are paid in low bracket years. This premise also applies if a drop in income tax rates is expected.

Another advantage of the charitable lead trust is that it allows a discounted gift to family members. Under present law, the value of a gift is set at the time the gift is complete. The family member remainderman must wait for the charity's term to expire; therefore, the value of that remainderman interest is discounted for the cost of waiting. In other words, the cost of making a gift is lowered because the value of the gift is decreased by the value of the income interest donated to charity.

**Note:** This rule does not apply if the trustee sells the property after the client's death.

When the assets in the trust transfer to the remainderman, any appreciation on the value of the assets is free of estate taxation in the client's estate.

Note: The economic schedule will end if the trust is depleted of funds prior to the end of the schedule.

### **Entering Data**

1. **Trust Type** – Select a type of trust.
2. **Transfer Date** – Enter the month and year (mm/yyyy).
3. **§7520 Rate** – Enter the rate that correlates to the transfer date.
4. **FMV of Trust** – Enter the initial Fair Market Value (FMV) of the assets placed in the trust when established.
5. **Growth of Trust** – Enter the growth percentage of the trust.
6. **Term** – If you chose a term or shorter trust, enter the number of years that the trust will last.
7. **Percentage Payout** – Enter the projected payout that will go to the charity during the life of the trust. (Valid entries: %0 - %100)
8. **Payment Period** – Select the number of payments that will be made during a normal full year to the beneficiary (Annual, Semiannual, Quarterly, Monthly, and Weekly).
9. **Months Valuation Precedes Payout** – Enter the number of full months by which the valuation date (for the assets of the unitrust) precedes the first payout in the first full taxable year of the trust (not the short first year). The program will only allow valid input values according to which Payment Period was selected in the previous entry field. Growth is applied on the payment schedule before payments are calculated unless Months Valuation Precedes Payout is zero. This does not pertain to the planning period before the trust goes into effect.
10. **Lives** – If you choose a life or shorter trust, enter the number of lives (up to five) used to determine the charitable deduction.
11. **Ages** – Enter the age(s) of the person(s) whose life is being used to measure the term of the trust as of the nearest birthday. You may enter up to five ages (Valid ages are 0-109.)
12. **Print Economic Schedule?** – Click Yes to include the economic schedule on the printed report.

### **Results**

The program displays the deduction allowed to a donor for a transfer of cash or other property to a charitable lead unitrust. Also shown is the future interest gift that will pass to the non-charitable remainderman. The deduction allowed is calculated both as a dollar amount and as a percentage of the amount transferred. The trust's payout sequence factor, adjusted payout rate, and the term of years factor are also given.

## Naming a Charity as Beneficiary of Group Term Life Insurance

### *Main Menu Name: Table I*

Calculates the annual income tax savings possible if a qualified charity rather than an individual is named as revocable or irrevocable beneficiary of group term life insurance.

This calculation determines the amount of annual income tax savings possible by naming a charity as the revocable beneficiary of group term life insurance in excess of the first (already income tax free) coverage. Usually, the cost of up to \$50,000 of group term life insurance coverage is not reportable as income but cost of coverage in excess of \$50,000 of coverage is taxable to the employee under so called “Table I rates.”

This technique, specifically sanctioned by Internal Revenue Code Section 79(b)(2)(B) has a number of advantages. First it’s simple. Nothing more is involved than making a revocable assignment of the death benefit to a qualified charity. Second the tactic freezes Table I income tax costs for every year that the charity remains a beneficiary. If, in some later year, a non-charitable beneficiary named for the amount in excess of \$50,000, the insured employee will then have to report income but will not have to report any income for the years in which the charity was named the beneficiary.

No income tax deduction is allowed since only a fraction of the insured person’s interest is given. To qualify for this income freeze, the charity must be named the sole beneficiary of the excess portion for the entire year. Any question about this being a partial interest gift can be avoided by naming the charity the beneficiary of all the entire proceeds rather than merely the excess over \$50,000 although this is probably a fractional interest in the group insurance so the partial interest rule should not apply. We suggest being conservative that the charity be named the beneficiary of the entire amount. Insurable interest should not be a problem in most states but should be checked.

As noted above, the cost of group-term life insurance protection in excess of \$50,000 is not taxable to an individual who names—even revocably—a qualified charity as the beneficiary of the excess coverage. Although no income tax deduction will be allowed for the gift, no income tax is reportable regardless of how much the employer has paid, For example, assume a 55-year-old employee in a 28% income tax bracket covered with group insurance equal to his salary of \$500,000.

### **Entering Data**

1. **Amount of Group Term Coverage** – Enter the total amount of group term insurance coverage without regard to the \$50,000 exclusion.
2. **Donor’s Age - End of Calendar Year** – Enter the age of the donor at the end of the calendar year.
3. **Monthly Cost (Per Thousand Dollars)** – The monthly cost will be displayed according to the entered Donor’s Age.
4. **Donor’s Income Tax Bracket** – Enter the donor’s income tax bracket.

### **Results**

The program calculates the units of excess coverage, the reportable income from excess coverage, the reportable income from one year’s coverage, and the income tax savings for naming the charity.

# Estate Planning Techniques

## Estate Tax Advantage of Gift Tax on Exclusion

### *Main Menu Name: Exclusion*

Calculates the estate tax savings possible through the use of the annual gift tax exclusion.

The gift tax annual exclusion allows a donor to donate, gift tax free, \$11,000 (beginning in 2002; the limit was \$10,000 before 2002 and could be increased for the cost of living at some future date) worth of gifts to any number of persons or parties each year. This allows taxpayers to make many small gifts without recording or reporting them. The maximum amount that may be excluded is calculated by multiplying the number of persons given gifts by \$11,000.

If the donor is married, his spouse may sign the donor's gift tax return as an indication that each spouse donated half the gift, even if the gift was actually donated by one spouse. Therefore, the per-donee exclusion increases to twice the annual exclusion amount.

An annual exclusion is permitted only for present interest gifts. A gift is considered present interest when the person receiving the donation has immediate possession or use of the gift when it is made. A future interest gift is one in which the possession or use of the gift is detained by a specified time after the gift is made. Future interests include reversions and remainders.

Single transfers are sometimes two gifts that have to be separated for tax purposes. One gift may be a present interest that qualifies for the annual exclusion, while the other gift may be a future interest that does not qualify for the annual exclusion. For example, a donor puts \$11,000 into a trust with a 12% interest rate. His son receives income annually from the trust for 10 years; his daughter is paid the remainder at the end of the 10 years. The son's income payments begin immediately; therefore, the gift is a present interest gift and qualifies for an annual exclusion. The daughter will not receive the remainder for 10 years; therefore, the gift is a future interest and does not qualify for an annual exclusion.

### Entering Data

1. **Year** – Enter the current year.
2. **Donor's Age** – Enter the age of the donor. Valid age entries are 5 to 115.
3. **Number of Donees** – Enter the number of people receiving a gift.
4. **Donee's Annual After-Tax Return on Gifts** – Enter the estimated after-tax rate of return the donee could potentially earn on the annual gift.
5. **Single Annual Exclusion** – Enter the amount of exclusion that the donee have not already used or allocated for the year.
6. **Annual Exclusion Inflation Adjustment** – Enter the percentage of inflation for the current year. **Note:** The Amount of Exclusion increases by the Annual Exclusion Inflation Adjustment amount each year starting in 1999. If the Year is prior to 1999, the Inflation Adjustment is only applied once to reach 1999.
7. **Donor's Hypothetical Estate Tax Bracket** – Enter the estate tax bracket that the donor is likely to be in at death.
8. **Take Advantage of Gift Splitting** – Select the check box to assume that the donor and the donor's spouse are both signing the gift tax return, indicating that half the gift is being given by each spouse. This doubles the Annual Exclusion for each year.

### Results

The Summary Tab displays the estate tax or generation skipping transfer tax savings possible through use of the gift tax annual exclusion. To calculate the tax savings possible, the calculation multiplies the number of donees receiving gifts by the amount of the annual exclusion available for each. It then multiplies that total by the donor's life expectancy based on the government's table in the regulations. This result is then multiplied by the federal estate tax bracket specified at the Donor's Projected Estate Tax Bracket entry field. The result is the potential federal estate tax or generation skipping transfer tax savings if the annual gifts are not invested by the donee.

The calculation then uses the rate specified in the Donor's Annual After-Tax Return entry field to calculate the potential estate tax savings. This value, displayed in the results, is the amount that would have been owed the government if no gifts had been made. The calculation determines this value under the assumption that the donee invested the annual gifts at the after-tax rate specified.

The Table Tab displays the Annual Exclusion, Number of Donees, Value of Gift, and Estate Tax Savings for each year.

## §6166 Installment Payment of Estate Tax

### *Main Menu Name: §6166*

This calculation determines if an estate meets code section 6166 requirements for a four year deferral and 10 year payout of federal estate tax. It then calculates the limit of the amount that can be paid in installments and the amount of tax that is due immediately. It computes the “two percent amount, the amount eligible for two percent interest, and then the annual payments and the after-tax cost to make those payments.”

Code section 6166 was created to alleviate an estate’s liquidity problems. If the estate is qualified to use section 6166, an executor may use installment payments to pay the federal estate (and/or generation skipping) tax attributable to the decedent’s interest in a closely held business. When section 6166 is used, tax payment is deferred for the first four payments and then paid in equal installments for the following ten years. Interest is paid all fourteen years.

The “2 percent amount” is incremental federal estate tax on \$1,000,000 (adjusted for inflation after 1999) above the unified credit applicable exclusion amount. The program calculates this 2 percent amount using the inflation adjustments made by the IRS up to the program’s release, future adjustments based on the inflation rate entered, and the estate tax calculated using the rates and credits provided by the Economic Growth and Tax Relief Reconciliation Act of 2001.

To qualify for section 6166, the gross estate must include an interest in a closely held business whose value is more than 35% of the adjusted gross estate. The tax, which may be paid in installments, is the proportion attributable to the value of the closely held business. The balance is paid nine months after the decedent’s death.

Section 6166 is a useful tool when an estate is unable to pay estate or generation skipping taxes without selling assets at a loss. It is also useful when the estate is capable of earning a greater after-tax rate of return than it spends in interest for the deferral privilege.

If the estate meets section 6166 requirements, the first payment of principal and interest must be paid within five years and nine months from the date of death. Succeeding installments are paid within one year of the previous one.

### **Entering Data**

1. **Year of Death** – Enter the year of the decedent’s death.
2. **Profit Margin of Business** – Enter the business’s profit margin.
3. **Underpayment Rate** – Enter the interest rate that will apply to the non-two percent amounts. This represents your estimate of future overall government interest rates, which may actually change every quarter.
4. **Inflation Rate** – Enter the inflation rate.
5. **Gross Estate** – Enter the value of the decedent’s gross estate.
6. **Admin. Expenses** – Enter the total amount of administrative expenses, funeral expenses, debts, etc.
7. **Value of Business** – Enter the value of the business.
8. **Net Federal Estate Tax** – Enter the net federal estate or generation skipping transfer tax payable.
9. **Estate Tax Calculations** – Because the 2% amount requires an estate tax calculation, if the year is 2010 or later, and Estate Tax Calculations box will appear. This allows you to select how future estate tax calculations will be handled: 2011 Sunset (to show the law as now written, with repeal

in 2010 and reinstatement of present law in 2011), 2010 Repeal in 2010+ (to assume that repeal is permanent), or 2009 Rates in 2009+ (the program default, to show no repeal and the continuance of 2009 rates and credits).

### **Results**

The Summary Tab indicates if an estate is capable of meeting code section 6166 requirements. It shows the amount of federal estate tax that can be paid in installments, and the tax that must be paid immediately. Additionally, the results separate the deferred tax into two portions: the portion taxed at the special 2% rate and the portion taxed at the going rate.



## Business Owner's §2057 Estate Tax Deduction

### *Main Menu Name: §2057*

Allows an executor to elect a special estate tax treatment for qualified family-owned business interests if the interests comprise more than 50 percent of a decedent's estate and certain other requirements are met.

In general, this deduction (when used in combination with the unified credit) exempts from federal estate tax the first \$1.3 million of value in qualified family owned business interests in a decedent's taxable estate. The deduction is limited to \$675,000, and the total of the deduction and unified credit applicable exclusion amount (which is \$625,000 in 1998) cannot exceed \$1.3 million. In other words, estates that claim this special deduction will be limited to a unified credit exclusion amount of \$625,000 and will not be able to claim the increases in the unified credit for 1999 through 2003. This deduction will be repealed in 2004, so the program does not allow you to enter a year past 2003.

A "qualified family owned business interest" is any interest in a trade or business (regardless of the form in which it is held) which also meets the following requirements:

- It has a principal place of business in the US, and
- Three families must hold ownership of the trade or business by at least 50 percent by one family, 70 percent by two families, or 90 percent by three families, as long as the decedent's family owns at least 30 percent of the trade or business.

"Members of an individual's family" are defined as:

- The individual's spouse
- The individual's ancestors
- Lineal descendants of the individual, of the individual's spouse, or of the individual's parents, and,
- The spouses of any such lineal descendants

The estate tax calculations take into account the changes in rates and credits provided by the Economic Growth and Tax Relief Reconciliation Act of 2001.

### Entering Data

1. **Assumed Year of Death** – Enter the assumed year of the decedent's death.
2. **Value of Qualified Family Business Interests in Gross Estate** – Enter the amount of business interests left to qualified heirs. (Go back to the Main Menu of the help for this calculation to see the definition of qualified heir.)
3. **Excess Cash and Marketable Securities in Business Value** – Enter the amount of working capital held by the business in excess of the day-to-day working capital needs (determined in a manner similar to *Bardahl Manufacturing Corp. v. Commissioner*, T.C. Memo. 1965-200).
4. **Passive ("Personal Holding Co.) Assets in Business Value** – Enter the total value of any "personal holding company type assets."
5. **Gift Tax Value of Business Interests Held by Family (Not Spouse)** – Enter the amount of any taxable gifts of business interests made to family members other than the spouse, regardless of when the gifts were made.
6. **Value of Other Assets in Gross Estate** – Enter the total value of all other assets in the gross estate.

7. **Gifts to Spouse Within 10 Years (Not Business Interests)** – Enter the total value of all gifts made to the spouse (other than interests in the business) within the past 10 years.
8. **Other Taxable Gifts Within 3 Years** – Enter the total value of all taxable gifts (other than interests in the business) made within three years of the presumed date of death.
9. **All Debts Deductible From Gross Estate** – Enter the total value of all debts that are expected to be deductible from the estate.
10. **Qualified Personal Residence Debt** – Enter the amount of qualified mortgage debt included in the total of debts of the estate. (A mortgage debt is qualified if the interest is deductible for federal income tax purposes.)
11. **Debt Used For Educational and Medical Expenses** – Enter the amount of debt included in the total debt that was incurred by the decedent to pay for educational or medical expenses of the decedent, the decedent's spouse, or the decedent's dependents.
12. **Adjusted Taxable Gifts (Business and Non-Business)** – Enter the total amount of all taxable gifts (not subject to the annual exclusion or the marital or charitable deductions) made after 1976. This amount should be greater than or equal to the value of "other taxable gifts within 3 years."
13. **Gift Tax Paid on Adjusted Taxable Gifts** – If federal gift tax was paid on any gifts made after 1976 (because the tax on the gifts exceeded the available unified credit), the amount of the tax should be entered here.
14. **Estimated Funeral and Administration Expenses** – Enter the estimated amount of all funeral and estate administration expenses.

### Results

The program shows the percentage of business owned by a family and whether or not the §2057 deduction may be taken. If the deduction can be taken, the amount of exclusion is calculated along with the federal and state death taxes saved by the deduction.

In order to qualify for the deduction, the adjusted value of the qualified family owned business interests must be more than 50% of the adjusted gross estate. The numerator of the fraction is the value of the decedent's qualified business interests reduced by the value of excess cash and marketable securities held by the business and passive ("personal holding company assets held by the business and increased by the gift tax value of business interest previously given to other family members (other than the spouse).") The value is also reduced by debts of the decedent (other than qualified personal residence debt and debt used for educational or medical expenses) in excess of \$10,000.

The denominator of the fraction is the total value of the decedent's gross estate (the value of the business interests not adjusted as described above), less all debts, but increased by the gift tax value of business interests previously given to other family members (other than the spouse), all gifts to the decedent's spouse within the precedent 10 years, and the value of all other taxable gifts (other than business interests) within the previous three years.

The §2057 deduction is limited to \$675,000. Also if the estate qualifies for the deduction, the unified credit applicable exclusion amount is \$625,000, regardless of the year of death, so that the total of the deduction and the unified credit applicable exclusion amount is not more than \$1,300,000. However, if the value of the qualifying business interests is less than \$675,000, the unified credit exclusion amount is increased by the difference (but not above the applicable exclusion amount for that year).



## Substantially Disproportionate Redemptions

### *Main Menu Name: Redemptn*

Calculates the number of shares that a corporation must redeem (buy back) in order for a redemption from a shareholder to qualify as a substantially disproportionate redemption. Substantially disproportionate redemptions are entitled to “sale or exchange” gains treatment. The calculation checks the “proper number to redeem” calculation by comparing the post-redemption ratio with the pre-redemption ratio.

All distributions from a corporation to a shareholder with respect to its stock are considered dividends to the extent of earnings and profits. Dividends are taxed at ordinary income rates. Some distributions, however, are deemed “amounts received in exchange” for the stock, rather than dividends. In this case, the seller pays tax only on the difference between the “amount realized” and the “adjusted basis.”

To qualify as an exchange, the transaction must satisfy the requirements of one of several tests (see Code Sections 302 and 303). One of these is the “substantially disproportionate” test. Under this test, the transaction is considered an exchange if the distribution from the corporation is substantially disproportionate with respect to the selling shareholder. A redemption is substantially disproportionate if it meets the following three criteria:

- After the redemption, the shareholder must own less than half of the total combined voting power of all classes of outstanding stock entitled to vote.
- After the redemption, the shareholder’s percentage of total outstanding voting stock must be less than 80% of his pre-redemption ratio.
- The shareholder’s post-redemption percentage ownership of outstanding common stock (voting or non-voting) must be less than 80% of his pre-redemption ownership.

A substantially disproportionate transaction is illustrated in the following example. Prior to redemption, a stockholder owns 30 out of the 100 shares of voting common stock outstanding (the only class of outstanding stock). His pre-redemption ratio is 30/100 (30%). Seven other shareholders hold 10 shares each. If the corporation buys back 10 of the stockholder’s 30 shares, but does not redeem shares from any other stockholder, the shareholder’s after-redemption ratio is 20/90 (22.2%). This is less than 50% of the outstanding stock and less than 80% of his pre-redemption ratio (80% of 30% is 24%); therefore the redemption is substantially disproportionate. If one of the other stockholders is someone whose stock is attributed to the stockholder (such as a child, wife, etc.) under constructive ownership (attribution) rules, the redemption of his shares does not qualify as substantially disproportionate. The disqualification occurs because the stockholder owns his own 20 shares, plus the 10 shares attributed to him. His after-redemption percentage would be 30/90 (33.3%), which is more than 80 percent of his pre-redemption percentage (40/100, 40%).

### **Entering Data**

Enter the Pre-Redemption values:

1. **Shares Actually Owned** – Enter the pre-redemption shares that were actually owned.
2. **Shares Constructively Owned** – Enter the pre-redemption shares that were constructively owned.
3. **Total Shares Outstanding** – Enter the pre-redemption total number of shares (actual and constructive) that were outstanding.

Enter the Post-Redemption values:

1. **Shares Actually Owned** – Enter the post-redemption shares that are actually owned.
2. **Shares Constructively Owned** – Enter the post-redemption shares that are constructively owned.
3. **Total Shares Outstanding** – Enter the post-redemption total number of shares (actual and constructively) that are outstanding.

### **Results**

The Summary Tab shows the number of shares that are owned pre and post redemption. It also displays the shareholder's pre-redemption and post-redemption ratios. Additionally, 80% of the pre-redemption ratio is calculated and displayed. This value is an essential factor in determining if the transaction qualifies as substantially disproportionate, as the post-redemption ratio must be less than 80% of the pre-redemption ratio.

The Redemption Tab shows the number of shares that must be redeemed (bought back) by a corporation in order for the redemption from a shareholder to qualify as “substantially disproportionate.” The shareholder must also own less than 50% of the total combined voting power in the corporation.

## §303 Stock Redemptions

### *Main Menu Name: §303*

Tests to see if a shareholder such as an estate is entitled to Section 303 protection. It also calculates the amount of stock that can be redeemed under Section 303.

IRC Section 303 allows a corporation to redeem a portion of a decedent's stock with a distribution that will not be taxed as a dividend. A Section 303 redemption can provide cash (or other property) from the corporation without tax at the shareholder level.

Section 303 is useful when the shareholder's family wants to retain control of a close or family corporation after the shareholder's death. A shareholder's family may find it particularly useful when the corporation's stock is the estate's primary asset, and the family is unable to pay death taxes and other expenses without a forced liquidation of the business.

The following conditions must be met to entitle a shareholder to a Section 303:

- The stock to be redeemed is a part of the decedent's gross estate.
- The stock's value is more than 35% of the decedent's gross estate minus deductions allowed for funeral and administrative expenses, debts, taxes, and losses acquired during administration.
- The amount redeemed is no more than the total of (a) federal estate, state death, and generation skipping transfer taxes and the interest on those amounts, and (b) funeral and administration expenses (whether or not claimed as a deduction on the federal estate tax return). Any amount over this total will be taxed under code Section 302 rules.
- Expenses incurred by the decedent's death, administrative expenses, and generation skipping transfer taxes reduce the interest of the shareholder whose stock is being redeemed.

The tax implications of a §303 redemption are:

- The amount paid to the estate will be treated as an exchange and not as a dividend. If the stock receives a step up in basis to its value at the shareholder's death and the corporation pays this price for it, no gain is recognized.
- Attribution rules do not apply to §303 redemptions.

### **Entering Data**

1. **Federal Estate Tax Value of Corporate Stock** – Enter the federal estate tax value of the corporate stock included in the gross estate.
2. **Adjusted Gross Estate** – Enter the adjusted gross value of the estate. The adjusted value includes reductions for funeral and administrative expenses, debts, certain taxes, and losses acquired during administration.
3. **Funeral and Administration Expenses** – Enter the total amount of expenses incurred by funeral and administration costs.
4. **Federal Estate Tax** – Enter the amount of expenses incurred by federal estate taxes.
5. **State Death Tax** – Enter the amount of expenses incurred by state death taxes.
6. **Generation Skipping Transfer Tax** – Enter the amount of expenses incurred by generation skipping transfer taxes.
7. **Interest Collected as Part of Above Taxes** – Enter the amount of interest collected as part of the taxes listed in the previous entry fields.

## Results

The Summary Tab indicates whether a shareholder (such as an estate) is qualified for the protection of Section 303. To determine this, the calculation determines 35% of the Adjusted Gross Estate. If this value is greater than the stock value, the estate qualifies for Section 303. The calculation also totals all expenses and taxes specified at the expenses and taxes inputs. This total is the maximum allowable Section 303 redemption and is displayed in the calculation results.

## Installment Sale

### *Main Menu Name: Install*

Evaluates the effect of purchasing a business interest through an installment sale. It calculates the interest and principal payments required in an installment sale. It also provides a schedule of interest and payment needed to service a buyout loan.

Paying for a deceased co-owner's business interest using the installment method has several drawbacks, including the following:

- The installment method may not produce the amount of cash needed by the client's family to cover expenses, such as federal and state death taxes and other estate settlement costs.
- The financial security of the decedent's family remains dependent on the success of the business.
- The cost can be very high, even if interest on the unpaid balance is deductible.

Potential buyers must consider the typically high cost involved with a buy-out. For example, assume a buyer plans to purchase a \$1,000,000 business interest. He will pay ten annual principal payments of \$100,000 a year, plus 10% interest on the unpaid balance. If the buyer is in a 35% tax bracket, the business needs to earn \$1,895,962 to service the loan.

### Entering Data

1. **Purchase Price** – Enter the purchase price of the property.
2. **Number of Payments** – Enter the total number of installment payment years. Valid inputs are between 1 and 30.
3. **Assumed Interest Rate** – Enter the rate of interest applied to unpaid balance.
4. **Buyer's Tax Bracket** – Enter the purchaser's appropriate income tax bracket.

### Results

The Summary Tab displays the cost of purchasing a business interest through an installment sale. A schedule of payments needed to buy the business interest is displayed. The schedule consists of the following:

- The year
- The annual principal payment
- The annual interest payment
- The annual combined principal and interest payment
- The annual earnings required from the business in order to make the payment.

The totals is provided for each column at the bottom of the summary report.



## Group Term Life Cost

### *Main Menu Name: Group Trm*

Calculates the amount an employee must include in his reportable income to reflect certain life insurance coverage provided by an employer.

Group term life insurance is a taxable economic benefit that must be included in an employee's reportable gross income. Generally, the first \$50,000 of coverage is income tax free, and any coverage in excess of \$50,000 is taxable. If the employee contributes to the coverage, the amount contributed is deducted from the taxable portion of the coverage.

The taxable portion is calculated using the following steps:

- The total amount of group term coverage on a monthly basis over a tax year is calculated.
- \$50,000 is deducted from each month's coverage.
- The appropriate rate from Table I of the government regulations is applied to the coverage.
- Employee contributions, if any, are subtracted from the total.

Regardless of the amount, the cost of group term life insurance is tax exempt if any one of the following conditions is true:

- The employee has retired on disability.
- A charity is the beneficiary of all or part of the proceeds during the tax year.
- The employer is the beneficiary.

Retired employees in nondiscriminatory plans also are subject to tax on the cost of insurance in excess of \$50,000.

### **Entering Data**

1. **Use Table I Rates Effective Starting 7/1/1999** – Select the check box to use the new term rates. It is not necessary to use this checkbox until July 1, 1999.
2. **Age of Employee** – Enter the attained age of the employee on the last day of his tax year. Valid age inputs are 1 to 100.
3. **Amount of Group Term Coverage** – Enter the total amount of group term coverage on a monthly basis over the employee's tax year.
4. **Employee's Contribution** – Enter the amount contributed by the employee to the group term coverage. If no contribution was made, enter 0.

### **Results**

The program calculates the amount an employee must include in his reportable gross income to reflect certain life insurance coverage provided by an employer.

To calculate this value, the calculation first subtracts the excludable amount (\$50,000) from the amount of group term coverage specified at the Amount of Group Term Coverage entry field. The result is the taxable portion of the death benefit. The calculation then multiplies the taxable death benefit by the annual Table I (of the government regulations) rate for the age specified in the Age of Employee entry field. From this amount, the calculation subtracts any contributions made by the employee to the group term coverage to arrive at the taxable income.



## Taxes

### Gift and Estate Tax Computation

#### *Main Menu Name: Estate Tax*

Calculates the gross gift or estate tax, applies the proper unified credit, and determines the net tax payable. It also calculates the remaining net estate and the percentage of the gross estate lost in taxes.

The top federal estate and gift tax rate (and the generation skipping tax flat rate) is 55%.

The estate and gift taxes are based on a series of graduated rates that start at 18% and reach the maximum rate (in 2001) of 55% on total gifts or taxable estates in excess of \$3,000,000. However, each person is allowed a unified credit that eliminates the tax in the lower estate and gift tax brackets. In 2001, the unified credit applicable exclusion amount is \$675,000, and for gifts and estates that exceed the \$625,000 applicable exclusion amount, the initial tax rate is 37%.

Also, estates in 2001 can lose the benefit of the graduated rates through an additional 5% tax that is applied once the total taxable transfers are in excess of \$10,000,000, up to a maximum of \$17,184,000. Above \$17,184,000, the maximum 55% rate applies to all additional amounts.

Under the Economic Growth and Tax Relief Reconciliation Act of 2001, the maximum estate and gift tax rate will be reduced to 50% in 2002 (with no additional 5% tax), and will decline by 1% each year after that until the maximum rate is 45%. The unified credit applicable exclusion amount is also increased to \$1,000,000 in 2002, and the estate tax exclusion amount will increase to \$1,500,000 in 2004, to \$2,000,000 in 2006, and to \$3,500,000 in 2009. The deduction for family-owned business interests is repealed in 2004, and the entire estate tax is scheduled to be repealed in 2010.

The gift tax unified credit applicable exclusion amount will remain at \$1,000,000 after 2002 and the gift tax is not supposed to be repealed, but in 2010 the maximum gift tax rate will be reduced to the maximum individual income tax rate (35%).

However, the Economic Growth and Tax Relief Reconciliation Act of 2001 contains a “sunset” provision that will repeal all of the above changes in 2011 and reinstate the present gift and estate tax rates and the \$1,000,000 unified credit exclusion amount.

There is great uncertainty about whether Congress will act before 2001 to either (a) eliminate (or postpone) the repeal of the estate tax or (b) repeal the sunset provision, so for years beginning with 2010 the program offers three different assumptions: (1) that rates and exclusions in effect in 2009 will continue in effect in 2010 and afterwards, (2) that the estate tax will end in 2010, or (3) that the Act will sunset as scheduled and the present estate and gift tax system will return in 2011.

Every state (and the District of Columbia) imposes a tax at least equal to the state death tax credit allowed for federal estate tax purposes, so the amount of that tax has been shown. Under the Economic Growth and Tax Relief Reconciliation Act of 2001, the credit (which is based on a schedule of graduated rates) will be reduced by 25% in 2002, and by an additional 25% each year until the credit ends in 2005 (and is replaced by a deduction). Some states may continue to impose a death tax that is equal to the full credit, or may impose a separate death tax that is greater than the credit, but those taxes have not been calculated.

Estates in excess of ten million dollars have lost the benefit of the graduated rates (but not the unified credit, because of a change made by the Taxpayer Relief Act of 1997). The benefit of the graduated rates is lost due to an additional 5% tax which is applied to the excess of taxable transfers over ten million dollars. The 5% tax is applied until the cumulative transfers reach \$17,184,000; the 55% rate is applied to additional amounts.

Recent changes in estate tax law have resulted in higher exemption amounts and other changes affecting estate tax calculations.

Estate Planning Tools allows you to select between three potential scenarios.

- 2011 Sunset
- 2010 Repeal in 2010+
- 2009 Rates in 2009+ (program default)

These choices will affect program computations for 2010 and later years only.

Explanation:

**2011 Sunset (current law with sunset):** Assumes repeal occurs in 2010 and prior law returns in 2011 with a 55% top rate and \$1 million exemption. This is way the tax law is currently written. This may be a reasonable assumption if one believes that no changes to the current law are likely and that the sunset provisions will prevail. One of the other two choices may be a better assumption if one believes that the sunset provisions will not be implemented due to future law changes.

**2010 Repeal in 2010+ (current law modified to remove sunset and make repeal permanent):** Assumes repeal becomes effective in 2010 and stays effective thereafter. This is what was originally intended by the tax writers, but ultimate repeal remains uncertain due to the inclusion of sunset provisions. This may be a reasonable assumption if one believes that the sunset provisions will not be implemented and repeal will ultimately prevail.

**2009 Rates in 2009+ (current law modified to continue estate tax with no repeal):** Assumes repeal never occurs and last scheduled rates are used in future years. This may be a reasonable assumption if one believes that repeal is unlikely to occur.

### Entering Data

1. Select a calculation (Estate Tax Computation or Gift Tax Computation) by clicking the radio button.
2. **Year of Death (Gift)** – Enter the year that the decedent died for an estate tax calculation. Enter the year the gift is made for a gift tax calculation. Valid Year inputs are 1987 through 2050.
3. **Taxable Estate (Gift)** – Enter the value of the Taxable Estate for an estate tax calculation. The Taxable Estate is the Gross Estate less Deductions. Enter the Taxable Gift for a gift tax calculation.
4. **Unified Credit Used by Prior Gifts** – Enter the amount of unified credit used by prior gifts. Click the button with the computer icon on it to calculate the maximum unified credit used by prior gifts.
5. **Pre-1977 Taxable Gifts** – Enter the amount of Gift Taxes paid after 1976. (This entry field only appears with Gift Tax calculations.)

6. **Adjusted Taxable Gifts (After 1976)** – Enter the amount of any taxable gifts. If there are no Adjusted Taxable Gifts, the tentative tax base will be equal to the Taxable Estate.
7. **§2057 (QFOBI) Deduction** – Enter the QFOBI deduction. (This entry field only appears with Estate Tax calculations and only for years before 2004, when the deduction is repealed.)
8. **Estate Tax Calculations** – If the year is 2010 or later, an Estate Tax Calculations box will appear. This allows you to select how future estate tax calculations will be handled: 2011 Sunset, 2010 Repeal in 2010+, or 2009 Rates in 2009+ (program default).
9. **Gift Tax Calculation**—Click the "Max Gift for Zero Gift Tax" to calculate the largest gift that can be made without generating any gift tax.

## Results

The Summary Tab displays the amount of federal gift tax that is payable if a lifetime gift is made, or the federal estate taxes that are payable if a transfer at death is made. The results also show the net estate remaining and the percent of the estate that is lost to the federal gift tax and federal estate tax.

For simplicity sake, not all possible credits are calculated in the calculation's results. The purpose of this calculation is to produce a quick, accurate estimate of the potential federal estate or gift tax.

## Projection of Estate Tax

### *Main Menu Name: Project*

Calculates the projected impact of federal estate taxes on estates subject to future taxation due to the combined effects of capital growth and inflation. It determines the total death taxes (state tax assumed to be equal to the federal credit) and the estate remaining after the survivor dies. Thorough estate planning requires consideration not only of an estate's current value, but also its expected future value when taxes will actually be paid.

Some couples qualify for the unlimited marital deduction which postpones federal estate taxes (and in some cases indirectly postpones state death taxes) until the survivor of a married couple dies.

When the survivor dies, the estate is subject to federal and state taxes. Unfortunately, the estate is often much larger than expected. Therefore, executors often do not anticipate the large amount of cash needed to pay the federal and state taxes and administrative costs. This is especially true in cases where the family business or some other relatively non-liquid asset comprises the bulk of the wealth.

This cash problem can be resolved in various ways. Most estate planners use life insurance, such as survivorship coverage, to produce the cash needed. Survivorship coverage insures two lives, but payment is made only after the second death occurs. Sometimes, the premiums are lower than if two individual policies are purchased. Alternatively, some couples choose to insure only the younger, healthier spouse. Regardless of the insurance policy chosen, sensible estate planning includes the purchase of a policy that will produce cash upon the death of the survivor of a married couple.

The estate tax calculations take into account the changes in rates and credits provided by the Economic Growth and Tax Relief Reconciliation Act of 2001.

### **Entering Data**

1. **Current Year** – Enter the current calendar year.
2. **Current Tentative Tax Base** – Enter the tentative tax base or taxable estate. This calculation assumes the Taxable Estate and Tentative Tax Base are equal. This is generally true unless there are Adjusted Taxable Gifts.
3. **Expected Growth Rate of Estate** – Enter the rate at which the estate is expected to grow.
4. **Client's Age at End of Current Year** – Enter the age of the client at the end of the current calendar year.
5. **Spouse's Age at End of Current Year** – Enter the age of the client's spouse at the end of the current calendar year. If client does not have a spouse, enter 0.
6. **Number of Years of Growth** – If Use Life Expectancy is checked, the program will calculate the joint life expectancy (or single life expectancy if '0' has been entered for Spouse's Age) and display that life expectancy as the Number of Years of Growth. If Use Life Expectancy is not checked, then enter the number of years that the estate should grow before the estate tax is calculated.
7. **Use Life Expectancy**–Select this check box to use the single or joint life expectancy as the Number of Years of Growth, or unselect this check box to manually enter a different value for Number of Years of Growth.
8. **Estate Tax Calculations** – If the year is 2010 or later, an Estate Tax Calculations box will appear. This allows you to select how future estate tax calculations will be handled: 2011 Sunset, 2010 Repeal in 2010+, or 2009 Rates in 2009+ (program default).

## Results

The program displays the estimated value of an estate at the end of a joint life expectancy. To calculate this value, the calculation compounds the current net worth at a specified rate of growth. It then determines joint life expectancy according to the latest IRS mortality tables and calculates the estimated size of the estate at the end of that joint life expectancy.

The results also display the total death taxes imposed on the estate and the estate remaining after these taxes are deducted.

## Bypass Trust Computation

### *Main Menu Name: Bypass*

Illustrates the benefit of the bypass trust by calculating the federal and state death taxes that would be payable at the second death, if the first spouse to die were to leave his or her entire estate to the survivor, so that the combined assets of the husband and wife were all taxable at the death of the survivor, and calculating the federal and state death taxes that would be payable at the second death if, at the first death, an amount equal to the unified credit applicable exclusion amount were removed from the taxable estates through a bypass trust. The difference in tax is the savings from the bypass trust.

The federal estate tax applies to the net estate of a decedent at death, but each person is allowed a unified credit which provides an exclusion from tax. For example, the unified credit applicable exclusion amount is \$1,000,000 for 2002. But for gifts and estates that exceed the \$1,000,000 applicable exclusion amount, the initial tax rate is 41%.

There is also an estate tax deduction for property passing to a surviving husband or wife, and so there is no federal estate tax if the entire estate is left to the surviving spouse. However, if a married person leaves his or her entire estate to his or her wife or husband, the benefit of that person's unified credit is lost, because the credit is not transferable. Using both their unified credits, a husband and wife can (in 2002) leave \$2,000,000 to their children (or other beneficiaries) free of federal estate tax, but if the first to die leaves his or her entire estate to the survivor of them, the survivor will have only one unified credit, and only half as much will be tax free.

An effective estate planning technique to use both unified credits is to change the wills or revocable trusts of the married couple so that, on the first death, the unified credit exclusion amount does not pass to the surviving spouse but is held in a trust for the benefit of the surviving spouse. In this way, the surviving spouse can get the income and benefit of the property held in the trust without the property being part of the survivor's estate. Upon the death of the surviving spouse, the property in the trust passes to (or in further trust for) the children or other intended beneficiaries free of tax. This kind of trust is sometimes called a "bypass trust," because the property in it bypasses the estate of the surviving spouse.

In order to create the largest possible bypass trust at the first death, and so get the greatest benefit from the decedent's unified credit, there must be assets in the decedent's estate (or revocable trust) sufficient to use up all of the decedent's unified credit. Assets that are jointly owned will pass outside of the will or revocable trust and cannot be used to fund the bypass trust. Life insurance or retirement

benefits payable to a named beneficiary will also pass outside of the will or revocable trust (and outside of the bypass trust). And if one spouse has a large estate and the other a small estate (or no separate estate at all), the benefit of the unified credit can be lost if the spouse with the smaller estate dies first. Finally, some assets may not be suitable for a bypass trust. For example, death benefits from a qualified plan or individual retirement account can be rolled over by a surviving spouse, and the income tax deferred on those benefits, but the income tax might have to be paid prematurely, with a greater income tax cost, if the benefits are payable to the bypass trust. Therefore, although the program assumes that a bypass trust can be fully funded at the first death, careful planning may be needed to be certain that there are in fact appropriate assets in the estate to fund the bypass trust at the first death.

Every state (and the District of Columbia) imposes a tax at least equal to the state death tax credit allowed for federal estate tax purposes, so the amount of that tax has been shown in the illustrations, where it is deemed to apply. The Credit is scheduled for repeal in 2005. Some states may impose a death tax that is greater than the credit, but those taxes have not been calculated.

The estate tax calculations take into account the changes in rates and credits provided by the Economic Growth and Tax Relief Reconciliation Act of 2001.

### Entering Data

1. **Net Value of Combined Assets of Both Spouses** – Enter the total value of the combined estates of the husband and wife. Be sure to include all assets that are included in the gross estate for federal estate tax purposes, including jointly owned property, life insurance, and retirement plans. (However, as noted in the main help file for this calculation, those assets might not be available or appropriate to fund a bypass trust.) Enter all values net of debts and estimated estate settlement expenses, as well as any charitable deduction that may be claimed at the second death.
2. **Years of Death** – Enter the expected or projected year of death for both the first and second death. Valid year inputs are 1997 or later.
3. **Adjusted Taxable Gifts** – Enter the amounts of any adjusted taxable gifts (i.e., taxable gifts after 1976) made by either the first spouse to die or the second spouse to die.
4. **Gift Tax Paid on Adjusted Taxable Gifts** – Enter the amounts of any gift tax actually paid (i.e., gift tax in excess of the unified credit) on taxable gifts made after 1976 by either the first spouse to die or the second spouse to die.
5. **Estate Tax Calculations** – If the year is 2010 or later, an Estate Tax Calculations box will appear. This allows you to select how future estate tax calculations will be handled: 2011 Sunset (to show the law as now written, with repeal in 2010 and reinstatement of present law in 2011), 2010 Repeal in 2010+ (to assume that repeal is permanent), or 2009 Rates in 2009+ (the program default, to show no repeal and the continuance of 2009 rates and credits).

### Results

The calculations are displayed in two columns, one showing the consequences of a bypass trust created at the first death to use the unified credit of the first to die, and one showing the entire combined estates passing to the survivor.

The amount passing to the bypass trust at the first death is calculated by taking the applicable exclusion amount for that year and deducting the amount of any adjusted taxable gifts entered.



For the Bypass Trust column, the survivor's taxable estate is the net value of the combined estates entered, less the amount passing into the bypass trust at the first death. For the All to Spouse column, the survivor's taxable estate is the entire net value of the combined estates entered.

The estate tax for the survivor's estate is calculated using the unified credit for the year of the second death, taking into account both the adjusted taxable gifts and the credit for gift tax paid that were entered for that second death.

The state death that is shown is the state death tax credit allowed for federal estate tax purposes, because all states impose a death tax at least equal to that credit. Some states may impose a death tax that is greater than the credit.

For simplicity, not all possible credits are calculated in the calculation's results. The purpose of this calculation is to produce a quick estimate of the potential federal estate tax.

The amount of the taxes saved by the bypass trust is the difference between the total federal and state estate taxes in the two columns.

## Marital Deduction Optimization

### *Main Menu Name: Mar. Ded.*

This calculation computes the optimum marital deduction when the decedent wishes to pay no federal estate tax but also wishes to leave as little as possible to the surviving spouse in order to maximize the use of the unified credit and state death tax credit and when some federal estate tax is necessary, and the payment of federal estate tax results in a reduction of the marital deduction (and additional estate) because of a circular estate tax calculation.

There is an estate tax deduction for property passing to a surviving husband or wife, and so there is no federal estate tax if the entire estate is left to the surviving spouse. However, there is also a unified credit for each decedent which provides an exclusion from tax. For example, the unified credit applicable exclusion amount is \$1,000,000 for 2002. But for gifts and estates that exceed the \$1,000,000 applicable exclusion amount, the initial tax rate is 41%. So if a married person leaves his or her entire estate to his or her wife or husband, the benefit of that person's unified credit is lost, because the credit is not transferable. An effective (and common) effective estate planning technique to use both unified credits is to change the wills or revocable trusts of the married couple so that, on the first death, the unified credit exclusion amount does not pass to the surviving spouse but is held in a trust for the benefit of the surviving spouse. In this way, the surviving spouse can get the income and benefit of the property held in the trust without the property being part of the survivor's estate. Upon the death of the surviving spouse, the property in the trust passes to (or in further trust for) the children or other intended beneficiaries free of tax. (See the Bypass Trust Computations to calculate the benefit from this trust arrangement.)

In most states (that impose a state death tax equal to the state death tax credit allowed for federal estate tax purposes), the optimum marital deduction (which eliminates all tax at the first death but does not cause any unnecessary estate tax at the second death) is equal to the unified applicable exclusion amount, reduced by any lifetime gifts. However, in states that impose separate inheritance or succession taxes, the amount that can pass free of federal estate tax at the first death is increased by the state death tax credit. The program calculates this maximum amount with a state death tax is entered.

A separate (but related) problem is the federal estate tax that can result when there is a state death tax (or gifts at death that do not qualify for the federal estate tax marital deduction) and the non-deductible taxes or gifts exceed the applicable exclusion amount. Because taxes that are paid out of the estate do not qualify for any deduction and reduce the amount available for the marital deduction, there is a resulting tax on tax because the tax that is paid increases the tax that must be paid. For example, if a married person were to die in 2000 and make a \$100,000 bequest to his or her children (or incur \$100,000 in taxes or nondeductible expenses), leaving the rest of the estate to the surviving spouse, there would be no estate tax if there were no lifetime gifts, because the \$675,000 applicable exclusion amount would shelter the \$100,000 from tax. However, if the decedent had used up his or her unified credit through \$675,000 of lifetime gifts, the \$100,000 would result in tax in excess of the unified credit, and so estate tax would be payable. The tax itself would reduce the estate passing to the surviving spouse, reducing the marital deduction and increasing the tax again. The program can solve this kind of recursive (or circular) calculation.

The estate tax calculations take into account the changes in rates and credits provided by the Economic Growth and Tax Relief Reconciliation Act of 2001.

## Entering Data

1. **Projected Year of Death** – Enter the expected or projected year of death. Valid year inputs are 1997 or later.
2. **Adjusted Gross Estate in X year** – Enter the adjusted gross estate (the total gross estate less debts and funeral and administration expenses). Be sure to include all assets that are included in the gross estate for federal estate tax purposes, including jointly owned property, life insurance, and retirement plans.
3. **Adjusted Taxable Gifts in X year** – Enter the amounts of any adjusted taxable gifts (i.e., taxable gifts after 1976).
4. **Gift Tax Paid on Adjusted Taxable Gifts** – Enter the total amount of any gift tax actually paid on taxable gifts made after 1976. The gift tax cannot be higher than 60%.
5. **State Inheritance Tax (if any)** – Enter the amount of any state inheritance, succession, or estate tax that is independent of the state death tax credit and will be payable at death.
6. **Estate Passing to Spouse Outside of Formula** – Enter the amount of any assets included in the gross estate and passing outside of the will or revocable trust or otherwise not subject to any marital deduction formula. Examples include jointly owned property, life insurance and retirement benefits payable to the surviving spouse as beneficiary, and specific (pre-residuary) gifts under the will or revocable trust. **Note:** The dollar amount entered here should not be bigger than the Adjusted Gross Estate. If bigger, the program will change the amount to match the Adjusted Gross Estate.
7. **Estate Passing to Others Outside of Formula** – Enter the total amount of assets included in the gross estate and passing to beneficiaries other than the surviving spouse. Examples include assets jointly owned with children, life insurance payable to children, or business interests left to children who are active in the business. **Note:** The dollar amount entered here should not be more than the difference between the Adjusted Gross Estate and the Estate Passing to Spouse Outside of Will. If bigger, the program will change the amount to equal the difference between the Adjusted Gross Estate and the Estate Passing to Spouse Outside of Will.
8. **Estate Tax Calculations** – If the year is 2010 or later, an Estate Tax Calculations box will appear. This allows you to select how future estate tax calculations will be handled: 2011 Sunset (to show the law as now written, with repeal in 2010 and reinstatement of present law in 2011), 2010 Repeal in 2010+ (to assume that repeal is permanent), or 2009 Rates in 2009+ (the program default, to show no repeal and the continuance of 2009 rates and credits).

## Results

The program calculates the maximum amount that can pass free of federal estate tax using the unified credit and state death tax credit or, if payment of federal estate tax is necessary, the amount of federal estate tax payable, taking into account the circular calculation that results if the federal estate tax (and state death taxes) reduces the marital deduction.

The maximum amount sheltered by credits is the largest amount that can pass free of federal estate tax, taking into account both the federal estate tax unified credit and the state death tax credit (if there is state inheritance tax payable). If there is no state inheritance tax payable, this amount is the unified credit applicable exclusion amount, less any adjusted taxable gifts. In most cases, the marital deduction will be the adjusted gross estate less the maximum tax free amount. However, the marital deduction cannot be more than the adjusted gross estate less the assets passing to others and the death taxes payable, and it cannot be less than the assets passing to the surviving spouse outside of any formula.

The federal estate tax is calculated from the marital deduction, and the state death tax is either the state death tax credit or the state inheritance tax entered, whichever is more. (This program does not calculate any increase in the state inheritance tax that may result from the circular estate tax calculations.)

If lifetime gifts have used up all (or nearly all) of the unified credit and there is state inheritance tax payable or assets passing to beneficiaries other than the surviving spouse, or if the amount passing to persons other than the surviving spouse exceeds the remaining unified credit exclusion amount, there can be a sufficient taxable estate (and adjusted taxable gifts) to cause federal estate tax. In that case, the federal estate tax may further reduce the marital deduction and result in additional federal and state death taxes.

## P.S. 58 Cost

### *Main Menu Name: P.S. 58*

Determines the amount an employee must include in his reportable income as the result of certain life insurance coverage supplied by an employer or under a qualified retirement plan. If the actual rate charged for one year term insurance to standard risks is lower than the P.S. 58 table rates, the lower rate may be used by replacing the P.S. 58 rate.

**Note:** If the insurer's rates for individual one-year term policies available to all standard risks (initial issue insurance) are less than the P.S. 58 rate, the insurer's rate may be used. "Fifth dividend option" rates, however, may not be used.

Life insurance protection supplied under a split-dollar plan or under a qualified pension, annuity, or profit-sharing plan is considered a current economic benefit (the equivalent of cash) provided to an employee by the employer or as a distribution by a pension or profit sharing trust. The employee is required to add the value of this benefit to his gross income for the year in which the premium is paid. This policy applies even if the insurance is on the life of a third party. The employee pays tax on the cost of the life insurance protection provided on his behalf. This amount is calculated by:

- Finding the difference between the face amount of insurance and the cash surrender value at the end of the policy year, and then,
- multiplying that amount by the one-year term premium rate at the insured's attained age in the government's P.S. 58 table.

Additional compensation may apply to an employee who receives dividends under a split-dollar plan. The rules are as follows:

- Dividends paid in cash are taxable.
- Dividends used to buy one-year term insurance under the fifth dividend option are taxable.
- Dividends used to purchase paid up life insurance are taxable if the employee has a non-forfeitable interest.
- P.S. 58 cost (or yearly renewable term cost if lower) is reportable if dividends are used to buy paid up additions and the employer is entitled to the cash surrender value and the employee's beneficiary collects the balance of any death benefit.
- If dividends are left on deposit and the employee has a non-forfeitable right to them, the dividends must be added to the employee's income.
- If dividends are used to decrease the premium, they are not added to the employee's income.

### **Entering Data**

The inputs under Part A must be entered. The inputs under Part B are entered if dividends are paid to or for the benefit of the employee.

#### **Part A**

1. **Employee's Age** – Enter the employee's attained age on the birthday nearest the beginning of the policy year. Valid inputs are 15 to 81.
2. **Death Benefit Face Amt.** – Enter the face amount of the death benefit.
3. **Cash Value to Employer:** – Enter the cash value going to the employee.
4. **Employee's Contribution** – Enter the amount contributed by the employee. If the employee did not contribute, enter 0.

### Part B

If dividends were paid, the following inputs must be entered.

1. **Employee Paid in Cash** – Enter the amount of dividend paid in cash to the employee.
2. **Used to Reduce Premium** – Enter the amount of dividend used to reduce the premium.
3. **Hold for Employee** – Enter the amount of dividend left on deposit for the employee.
4. **Employee Controls Cash Val./Death Benefit of Paid Up Additions** – Enter the amount used to purchase paid up additions.
5. **If Dividends Used to Buy 1-Year Term Insur. for Employee** – Enter the amount of dividend used to purchase a one-year term of insurance for employee.
6. **P.S. 58 Cost (or Lower Published Yrly, Renewable Term Cost)** – Enter the applicable P.S. 58 cost or renewable term cost.

### Results

The program shows the Net Amount at Risk, finds the appropriate P.S. 58 charge, and uses it to calculate the Gross Amount Includible. It then subtracts the employee's contribution and adds the dollar value of any dividends paid to the employee for his benefit to calculate the Reportable P.S. 58 Cost.

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## Tax on a Net Gift

### *Main Menu Name: Net Gift*

This calculation determines the tax on a net gift as well as the tax reduction that results from the net gift (because the donor has made a smaller gift). A net gift results when the donee agrees to pay the gift taxes on the transfer because the amount of the gift is reduced (“netted”) by the gift tax to be paid by the donee. Net gifts are good ways of transferring property when:

- The donor does not have sufficient liquid assets to pay gift taxes and does not want to sell other property to raise cash.
- The donor wants to limit the gift to its net value.

Those considering net gifts must consider both gift tax and income tax implications. The gross amount of the gift is reduced by the amount of the gift tax paid by the donee. The gift tax is then computed on the remaining or net amount of the gift. For income tax purposes, a net gift is considered partially a sale and partially a gift. A taxable gain results when the gift tax paid by the donee exceeds the donor’s basis in the property.

The gift tax calculations take into account the changes in rates and credits provided by the Economic Growth and Tax Relief Reconciliation Act of 2001.

### Entering Data

1. **Year of Gift** – Enter the year in which the gift was made. Valid year inputs are 1901 and later.
2. **Taxable Gift (Before Tax)** – Enter the amount to be given to the donee after taking into account any annual exclusion, but without any reduction for the gift tax to be paid by the donee.
3. **Prior Taxable Gifts** – Enter the total amount of all taxable gifts made in prior years. (From Schedule B of Form 709.)
4. **Unified Credit Used by Prior Gifts** – Enter the total amount of unified credit used by the taxable gifts in prior years. (From Schedule B of Form 709.)
5. **Gift Tax Calculations** – If the year is 2010 or later, a Gift Tax Calculations box will appear. This allows you to select how future estate tax calculations under the Economic Growth and Tax Relief Reconciliation Act of 2001 will be handled: 2011 Sunset (to show the law as now written, with a 35% rate in 2010 and reinstatement of prior law in 2011), 2010 35% in 2010+ (to assume that the 35% rate is permanent), or 2009 Rates in 2009+ (the program default, to show no 35% rate and the continuance of 2009 rates).

### Results

The program shows the value of the taxable gift after reducing the gift by the gift tax to be paid by the donee, as well as the calculation of the amount of tax owed by the donee on the gift received. The results also show the calculation of the gift tax on the original amount of the gift, without the reduction for the gift tax to be paid by the donee, and the reduction in the gift tax that results from the smaller gift.

## Individual Income Tax

### *Main Menu Name: Indiv. Tax*

Calculates the tax payable in 1991 to 2002 (or estimates for 2003 or later) by single, married filing joint, and married filing separate taxpayers, as well as those filing as head of household. The taxpayer's marginal and effective tax rates are also computed. For years after 2002, the program uses the entered inflation rate to estimate the income tax. Each year, Brentmark Software updates the program with more current tax brackets.

The Economic Growth and Tax Relief Reconciliation Act of 2001 has made the following changes to the income tax calculations:

- There are several changes to rates and brackets, with a new 10% bracket in 2002 (with a comparable credit for either 2000 or 2001), reductions in all income tax rates (except the 10% and 15% rates) resulting in a top income tax rate of 35% by 2006, and a change in the 15% bracket to partially reduce the so-called "marriage penalty" beginning in 2005.
- Another partial reduction in the marriage penalty is an increase in the standard deduction for married taxpayers to twice that of single taxpayers, to be phased in from 2005 to 2009.
- Certain itemized deductions of upper-income taxpayers are reduced by the lesser of (a) 3 percent of the amount by which adjusted gross income (AGI) exceeds a certain threshold, or (b) eighty percent of AGI. This reduction will be phased out from 2005 to 2009.
- Personal exemptions are also reduced for upper-income taxpayers by 2 percent for each \$2,500 (\$1,250 for married taxpayers filing separately) by which AGI exceeds a threshold amount. This reduction is also phased out from 2005 to 2009.

These changes are all scheduled to "sunset" in 2011, at which time all income tax rates and deductions will return to prior law. To calculate taxes after 2010 based on prior law, change "Apply Sunset Provision?" to "Yes."

The IRS makes annual adjustments for inflation in the tax rate schedules, personal and dependency exemptions, and standard deductions. This calculation uses the IRS formulas to make these same adjustments. To calculate estimated tax for future tax years, simply enter the assumed average annual inflation rate until the year of estimate.

For the year 2001, Section 6428 (added by the Economic Growth and Tax Relief Reconciliation Act of 2001) allows a tax credit in lieu of the new 10 percent income tax bracket. However, most taxpayers will receive a check during 2001 for the credit, based on 2000 income, and will not be able to claim the credit against the 2001 tax. The program therefore shows the 2001 income tax liability without the 10 percent bracket and without the tax credit, but shows the maximum possible credit on a separate line.

### **Entering Data**

1. **Year of Estimate** – Enter the year for which payable taxes are being calculated. The program handles years from 1991 onwards, with estimated tax brackets and other inflation adjustments after 2002.



2. **Anticipated Annual Inflation Adjustment** – Enter a rate by which inflation is expected to rise each year. If you are calculating tax for past years, this input is not applicable.
3. **Estimated Gross Income** – Enter the estimated amount of adjusted gross income for the year in which taxes are being calculated.
4. **Estimated Total Itemized Deductions** – Enter the estimated total of allowable itemized deductions.
5. **Estimated Med., Casualty, Inv. Int. Deductions** – Enter the estimated total of allowable medical, casualty, or theft losses, and investment-interest deductions (subject to the regular limits and restrictions discussed above).
6. **Filing Status** – Choose the applicable filing status (Single, Joint, Separate, Head of Household).
7. **Number of Personal Exemptions** – Enter the number of allowable personal and dependency exemptions.
8. **Age in Year of Estimate** – Enter the taxpayer's age in the estimated year.
9. **Spouse's Age in Year of Estimate** – Enter the age of the taxpayer's spouse in the estimated year.

### Results

The Summary Tab displays the federal income tax due based on the adjusted gross income, itemized deductions, filing status, and number of personal and dependency exemptions. Results are calculated for joint, single, and separate taxpayers as well as those filing as head of household.

To calculate the tax payable, the calculation automatically calculates your standard deduction, applies any applicable phase-out reductions, and calculates your adjusted itemized deductions. The standard and adjusted itemized deductions are displayed on the results screen. The calculation then uses either the standard deduction or adjusted itemized deduction (whichever is greater) to calculate the taxable income. It then subtracts any personal and dependency exemptions by the phase-out amount to arrive at the adjusted personal exemptions. Also calculated are the effective average tax rate, the effective marginal tax rate (for an assumed income increment of \$2,500), the taxable income, and the amount of tax due.

## Corporate Income Tax

### *Main Menu Name: Corp. Tax*

Calculates the tax payable for the years 1987 to 2001 by C corporations, personal service corporations, and trusts and estates. The taxpayer's net income after payment of the tax, the top marginal bracket, and the percentage of total income lost to federal income tax are also computed.

This calculation determines the corporation's federal tax payable and the net income after payment of the tax. Also calculated are the top marginal bracket and the percentage of total income lost to the federal income tax. These calculations are also performed for service corporations and trusts/estates.

### **Entering Data**

1. **Year** – Enter the year of the computation. The program handles 1987 through 2001.
2. **Taxable Income** – Enter the total amount of taxable income.

### **Results**

The program shows the tax payable for C corporations, service corporations, and trusts and estates. Also displayed are the net amount of income remaining after the federal tax has been paid, the marginal rate (the rate that will be levied against the next dollar earned by the taxpayer), and the overall rate (percentage of taxable income lost in taxes).



# Retirement

## Lump Sum Distributions

### *Main Menu Name: Lump Sum*

Calculates the tax due, the amount remaining, and the effective tax rate on a lump sum distribution from a qualified pension or profit sharing plan if the lump sum qualifies for ten-year averaging at the 1986 rate, or five-year averaging at the current year's rate (for years prior to 2000).

Lump sum distributions from a qualified pension or profit sharing plan must be included in reportable gross income and taxed at ordinary rates. For example, assume an individual has \$100,000 of taxable income in 1993 and files jointly with two exemptions with the applicable tax being \$23,529. If an additional \$100,000 in pension payments is received by the individual, the tax on the total income would be \$58,205. The additional \$100,000 cost \$34,676 in additional tax (\$58,205 minus \$23,529). However, if the individual received a lump sum of \$100,000 that qualified for special five-year averaging, the tax on the lump sum would be \$15,000 or a difference of \$19,676 (\$34,676 minus \$15,000).

The lump sum qualifies for this one-time election of five-year averaging only if all of the following requirements are met:

- The sum is taken prior to the year 2000.
- The sum is received after the recipient turned 59½ years of age.
- The sum is paid within one tax year.
- The sum is the entire distribution of the employee's benefit in the plan. (All pension plans maintained by an employee are considered a single plan. This also applies for profit sharing and stock bonus plans.)
- The sum is payable for one of the following reasons:
  - a) the participant has died;
  - b) the participant has attained age 59 1/2;
  - c) the employment of a non-self employed individual has been terminated;
  - d) a self-employed individual has become disabled.
- The sum is distributed from a qualified plan (not an IRA or 403(b) tax-deferred annuity).
- The employee participated in the plan for at least five years prior to the distribution (this requirement does not apply to a death benefit).

If the lump sum distribution meets all of the above qualifications, it is eligible for five-year averaging. In some cases, certain tax benefits available before 1987 for lump sum distributions have been grandfathered for existing participants. Such participants may choose to treat the amount accumulated prior to 1974 as a long-term capital gain. If the participant was in the plan prior to 1974, the distribution is divided into two amounts, a pre-1974 amount and a post-1975 amount. The pre-1974 amount is taxed at a 20% rate (the capital gain maximum). This capital gain treatment is phased out in the following manner: only 95% of the pre-1974 amount is eligible in 1988, 75% is eligible in 1989, 50% in 1990, and 25% in 1991.

This capital gain treatment is not required. The entire distribution can be treated under current five-year averaging if the participant so chooses. Any part of the distribution that does not qualify for capital gains treatment can (if it does) qualify for five year averaging.

From 1974 through 1986, ten-year averaging was applied to lump sum distributions. This practice is still available for individuals who attained age 50 before January 1, 1986. Such individuals who receive a distribution after 1986 may use ten-year averaging with the 1986 tax rates instead of five-year averaging with current rates. This practice is recommended if it results in lower taxes.

### Entering Data

1. **Current Year** – Enter the current year. The program handles years from 1987 through the current year.
2. **Taxable Amount of Lump Sum Distributions** – Enter the taxable amount of the lump sum distribution.

### Results

The program shows the amount of tax due, the amount remaining, and the effective tax rate on a lump sum distribution. To calculate these values, the calculation first subtracts a “minimum distribution allowance” from the taxable amount specified at the Taxable Amount of Lump Sum Distribution entry field. The minimum distribution allowance is the lesser of (a) \$10,000 or (b) one-half of the total taxable amount in excess of \$20,000. (The minimum distribution allowance does not apply if the taxable amount is \$70,000 or more.) The calculation then divides the remaining taxable amount by five and determines a separate tax on this portion based on the single taxpayer rate without any deductions or exclusions. The resulting tax is then multiplied by five. Results are shown for ten-year averaging, five-year averaging (last year’s tax rate), and five-year averaging (the current year’s tax rate).

## Retirement Plan Taxation

### *Main Menu Name: Confiscate*

Illustrates the potential impact of three taxes on a distribution from a retirement plan to a grandchild. It shows how little remains after:

- The federal estate and state death tax,
- The generation skipping transfer tax, and
- The lump sum income tax on retirement distributions after a participant's death.

Before a grandchild receives a retirement distribution at the participant's death, the sum is subject to the federal estate tax, the generation skipping transfer tax, and the lump sum income tax. These taxes have a significant impact on the distribution amount actually received by the grandchild.

A description of each tax follows:

- The first set of taxes is death taxes, the federal estate tax and state death tax. The death taxes attributable to the plan are calculated to be the increase in taxes caused by the plan.
- The second tax is the generation-skipping transfer tax (GSTT). When the distribution is to a grandchild or another beneficiary who is two or more generations younger than the transferor is, the distribution may be subject to the GSTT tax. This GSTT tax is applied at a rate equal to the highest federal estate tax rate on every taxable dollar. A GST exemption will shelter the smaller estates, and if used to buy life insurance owned by a third party, can be leveraged to provide protection from this high tax.
- The third tax is the federal income tax. The federal estate tax and the generation-skipping tax may be deducted before the income tax liability is imposed. The program performs a precise calculation of the §691(c) deduction for the increase in the net federal estate tax caused by the plan.

In applying taxes to a distribution, this calculation is designed to illustrate the "worst-case" scenario. Consequently, the results may be extreme, but they are also possible.

The estate tax calculations take into account the changes in rates and credits provided by the Economic Growth and Tax Relief Reconciliation Act of 2001.

### Entering Data

1. **Year of Assumed Death** – Enter the year of the participant's death.
2. **Value of Participant's Interest in Plan** – Enter the value of the participant's interest in the retirement plan.
3. **Participant's Taxable Estate** – Enter the participant's taxable estate for federal estate tax purposes, including the value of the Participant's Interest in Plan (the previous input value). This input now provides a precise §691(c) estate tax deduction.
4. **GSTT Tax Rate if Applicable** – Enter the applicable generation-skipping transfer tax rate. If applicable, the GSTT will be 55% before 2002, 50% in 2002, 49% in 2003, 48% in 2004, 47% in 2005, 46% in 2006, and 45% beginning in 2007. If the GSTT does not apply, enter 0.
5. **Remaining Amount of GSTT Exemption** – Enter the remaining amount of GSTT exemption.

- Exemption for 1998 is \$1,000,000
- Exemption for 1999 is \$1,010,000
- Exemption for 2000 is \$1,030,000
- Exemption for 2001 is \$1,060,000
- Exemption for 2002 is \$1,100,000
- Exemption for 2003 is assumed to increase by 3% for inflation
- Exemption for 2004 and 2005 is \$1,500,000
- Exemption for 2006 through 2008 is \$2,000,000
- Exemption for 2009 is \$3,500,000

If the maximum GSTT exemption allowed is not entered, or if an amount less than the maximum amount allowed is entered, a button with a computer icon on it will appear. Click on it to calculate the exemption.

If the year 2003 is entered, you will see a message advising you that the GSTT Exemption Allowed is only an estimate.

6. **Lump Sum Income Tax Rate** – Enter the estimated income tax rate at the time of death.
7. **Estate Tax Calculations** – If the year is 2010 or later, an Estate Tax Calculations box will appear. This allows you to select how future estate tax calculations will be handled: 2011 Sunset, 2010 Repeal in 2010+, or 2009 Rates in 2009+ (program default).

### Results

The Inputs/Summary tab displays the amount of federal estate tax and state death tax, GSTT, and federal income tax payable on a distribution from a retirement plan to a grandchild. To calculate these values, the calculation first determines the amount subject to tax, and the tax payable. These values are displayed on the Details tab.

The program then displays the federal estate tax and state death tax and the amount remaining after deducting the tax. Any unused GSTT exemption is then considered and any balance is used in a formula that determines the GSTT tax. At this point, the calculation applies the income tax rate to the taxable amounts (the federal estate tax and GSTT are not part of the base upon which the table rates are applied). The Details tab shows the total amount of taxes deducted from the distribution, the amount that will be received after taxes are deducted, and the percent of the distribution which remains after taxes.



## Pre-59½ Distributions

### *Main Menu Name: Early*

Calculates two of the three allowable methods for computing the substantially equal payments needed to avoid the 10% early distributions penalty. The 10% early distribution penalty applies to lump sum distributions, deemed distributions, and both voluntary and involuntary cashouts (unless the amount of the cashout is rolled over to another qualified plan or IRA). The IRS states that the money must be taken out in substantially equal periodic payments. These payments are made not less than annually.

The penalty **Does Not** apply to the following distributions:

- Distributions made after age 59½
- Distributions made to the beneficiary of the plan or their estate on or after the participant's death
- Distributions made because of the permanent disability of the participant
- Distributions made after separation from service after age 55 (this does not apply to IRAs)
- Distributions made to a former spouse, child, or other dependent of the participant if made under a QDRO—Qualified Domestic Relations Order—(does not apply to IRAs)
- Distributions made to the extent of medical expenses whether or not they were actually deducted (does not apply to IRAs)

There are three methods by which to calculate these distributions: Minimum Distributions, Amortization, and Annuity Factor. Estate Planning Tools illustrates the Amortization and Annuity Factor methods to calculate early distributions.

The **Amortization Method** allows the amount that is distributed annually to be calculated by amortizing the employee's account balance over a number of years equal to the life expectancy of the account owner or the joint life expectancies of the account owner and beneficiary. Life expectancies are to be determined in accordance with IRS regulations with an interest rate beginning on the date the payments commence that does not exceed a reasonable interest rate.

The **Annuity Method** determines the amount that is distributed annually by dividing the pension owner's account balance by an annuity factor which is derived by using a reasonable mortality table and a reasonable interest rate.

### **Entering Data**

1. First Distribution Date—Enter the month and year of the first distribution.
2. Pension Fund Balance – Enter the value of all assets in the plan.
3. Owner's Age – Enter the age of the current owner of the pension fund during the current tax year.
4. Beneficiary – Choose whether to use a beneficiary or not.
5. Beneficiary's Age – Enter the age of the beneficiary. If you do not choose to use a beneficiary, this entry field will not appear.

### **In 2003 and later:**

### **Use Uniform Table for Amortization**

Select whether to use the Uniform Life Expectancy Table or not.

Under Rev. Rul. 2002-62 (which applies in 2002 and later; see below), the Amortization method can be used with either the single life expectancy, joint life expectancy, or the new Uniform Lifetime Table. Once a life expectancy table is selected, it must be used for the duration of the distributions.

### **Use Methodology from IRS FAQ**

The IRS published an article on its web site entitled "FAQs regarding Revenue Ruling 2002-62" (see <http://www.irs.gov/retirement/article/0,,id=103045,00.html>) that includes examples of how to do the pre-59½ distribution calculations. Unfortunately, they used some rather unusual assumptions for doing the calculations.

For the Amortization method, the article illustrates a distribution that is taken at the end of each year. This is an easy enough calculation to do, except that Rev. Rul. 2002-62 limits the "reasonable interest rate" by the mid-term rates from the two months prior to the first distribution. Based on this discrepancy, the IRS must be expecting you to guess at the interest rate, or they are allowing an "end-of-period" methodology for a distribution that starts immediately.

For the Annuitization method, the article shows an annuity factor that uses the "curtate" approach to valuing annuities. This approach is not frequently seen in IRS calculations. In the past, the IRS has used the "complete" method for valuing annuities (IRS Publication 1457, for example) when using government tables.

The distribution calculations in the FAQ result in higher distribution amounts. The software allows you to use the FAQ's methodology—just select "Rev. Rul. 2002-62 FAQ." When you have made this selection, the annuitization method will use the "curtate" method of valuing annuities, and the amortization method will use the "end-of-period" method (even though the distribution is assumed to start immediately).

### **Before 2003:**

**Reasonable Interest rate** – Enter an interest rate to be used with the Amortization and Annuity Factor methods of calculating the distribution. In some cases, the IRS has accepted the use of the Annual Long-Term 120% Applicable Federal Rate (AFR) for the month in which distributions begin. This rate changes monthly and is reported in the Wall Street Journal (see Federal Interest Rates in the Money and Investing section, generally between the 18th and 23rd of the preceding month).

**Annuity Factor Table** – When calculating an annuity factor for the Annuity method, the program requires you to select a mortality table. The program offers the 80CNSMT (1980 table from IRS publication 1457), the §1.72 (1983 table listed in IRS Regulations §1.72-7(c)(1)(iii)), the UP-1984 Table, and the 90CM table. The example in IRS Notice 89-25, 1989-1 C.B. 662 uses the UP-1984 Mortality Table. As of May 1, 1999, the IRS released the 90CM mortality table. This table replaces the older 80CNSMT. Between May 1, 1999 and June 30, 1999, you can use either the 80CNSMT or the 90 CM. After June 30, 1999, do not use the 80CNSMT (T.D. 8819; REG-103851-99). Note: Brentmark has permission to use the UP-1984 Table. Copyright © 1976 Conference of Consulting Actuaries, All Rights Reserved.

Distribute at Beginning of Year – Choose yes if the distribution is at the beginning of the year. Mortality Table –When calculating an annuity factor for the Annuity Method, the program requires that you select a Mortality Table. The program offers the 80CNSMT (1980 table from IRS publication 1457), the §1.72 (1983 table listed in IRS Regulations §1.72-7(c)(1)(iii)), the UP-1984 Table, and the 90CM table. The example in IRS Notice 89-25, 1989-1 C.B. 662 uses the UP-1984 Mortality Table. As of May 1, 1999, the IRS released the 90CM mortality table. This table replaces the older 80CNSMT. Between May 1, 1999 and June 30, 1999, you can use either the 80CNSMT or the 90 CM. After June 30, 1999, do not use the 80CNSMT (T.D. 8819; REG-103851-99). Note: Brentmark has permission to use the UP-1984 Table. Copyright © 1976 Conference of Consulting Actuaries, All Rights Reserved.

## **Results**

Two results are presented:

- **Amortization Method**—Shows the calculated life expectancy of the pension fund owner and the amount of money that needs to be distributed annually in order to avoid the 10% tax penalty.
- **Annuity Method**—Shows the annuity factor (the present value of an annuity of \$1 per year beginning at the taxpayer's age attained in the first distribution year and continuing for the life expectancy of the taxpayer) for the pension fund owner and the amount of money that needs to be distributed annually to avoid the 10% tax penalty.

## Determination of Cash Requirements

### *Main Menu Name: Cash Needs*

Determines the cash requirements for a person upon the death of his or her spouse. It provides a cash flow analysis including the Adjusted Gross Estate and the Taxable Estate. It also provides the State Death Tax Credit and the Federal Estate Tax Payable.

The estate tax calculations take into account the changes in rates and credits provided by the Economic Growth and Tax Relief Reconciliation Act of 2001.

### Entering Data

1. **Current Year** – Enter the year of death.
2. **Value of Gross Estate** – Enter the total value of the estate at the time of death. (This is the amount before deductions.)
3. **Funeral & Admin. Expenses** – Enter the total amount of expenses incurred.
4. **Debts & Taxes** – Enter the total amount of debts and taxes incurred due to the death of the decedent.
5. **Other Losses** – Enter any other losses incurred by the deceased.
6. **Adjusted Taxable Gifts** – Enter the taxable portion of post-1976 lifetime taxable transfers not already included in the Gross Estate.
7. **Total Cash Bequests** – Enter the total amount of any cash bequests indicated in the deceased's estate.
8. **Liquidity Presumed Available** – Enter the total value of all liquid assets at the time of death.
9. **Foreign Death Taxes** – Enter any credit for foreign death taxes (if applicable).
10. **Tax on Prior Transfers** – Enter the amount of credit for tax on prior transfers.
11. **§2057 Deduction** – Enter the amount of the §2057 deduction. No deduction is allowed after 2003, when the deduction is repealed.
12. **Marital Deduction** – Enter the amount of marital deduction. There is an unlimited deduction for gifts made between spouses.
13. **Charitable Deduction** – Enter the total amount of contributions made to charitable organizations that qualify for the charitable deduction.
14. **Gift Taxes Paid or Payable on Post-1976 Gifts** – Enter the amount of gift taxes paid after 1976.
15. **State Death Tax Payable** – Enter the amount of state inheritance taxes.
16. **Override Computed Value** – Select the check box to override the value computed by the program.
17. **Estate Tax Calculations** – If the year is 2010 or later, an Estate Tax Calculations box will appear. This allows you to select how future estate tax calculations will be handled: 2011 Sunset (to show the law as now written, with repeal in 2010 and reinstatement of present law in 2011), 2010 Repeal in 2010+ (to assume that repeal is permanent), or 2009 Rates in 2009+ (the program default, to show no repeal and the continuance of 2009 rates and credits).

### Results

The Summary Tab displays all of the figures that are needed to arrive at the Total Cash Requirements for a person after the death of their spouse. The calculation results display the Adjusted Gross Estate

(the amount after deductions have been taken), the Taxable Estate, as well as the Tentative Tax Base. Also shown is a comparison of the amounts of Federal Estate Tax Payable before and after any Tax Credits. These results are used to then arrive at the Total Cash Requirements.

Details of the calculations used by the program for the Determination of Cash Requirements of Year 1997 and Summary of Cash Needs can be viewed when you click the Details tab in the lower portion of your screen. This detailed calculation explanation is based on the inputs you have entered.



# Future Value

## Present Value of an Annuity

### *Main Menu Name: Receipts*

Calculates the lump sum of money you must invest to produce an income of \$X per year for Y years. It assumes the initial investment is made at the beginning of the year, that no additional withdrawals or investments are made, and that the specified rate of interest does not change throughout the investment period.

The present value of an annuity is the sum of money in current dollars that equals future income payments received each year for a specified period at a specified rate of interest.

This calculation is useful for individuals who want to receive \$X every year for Y number of years. For example, assume a person wants to receive \$10,000 each year for 20 years following his retirement. If he earned 10% on the invested funds, his initial investment must be a lump sum of \$85,136. He could then receive \$10,000 annually for twenty years. At the end of the twenty years, the fund will be exhausted.

This calculation is also used to determine the current value of any asset that will produce a series of payments in the future on a steady basis at a given interest rate. An example of such an asset is a lease that will earn a specified amount each year for a specified number of years.

### **Entering Data**

1. **Annual Amount Received** – Enter the amount that will be received each year from the investment.
2. **Effective Interest Rate** – Enter the interest rate applied to the investment.
3. **Number of Years** – Enter the number of years that funds will be received from the investment.

### **Results**

The calculation results show the present value of a series of future payments. This amount must be invested today if the amount specified at the Annual Amount Received entry field is to be generated. In other words, the calculation determines the lump sum of money which must be invested to produce an income of \$X per year for Y years. The calculation also calculates and displays the actual amount received from the series of payments.

In its calculations, the calculation assumes the following: the series of payments continues for the number of years specified at the Number of Years entry field; the rate specified at the Effective Interest Rate entry field applies throughout the payment period; the initial investment is made at the beginning of the period; the same amount of income is paid out each year; and no additional withdrawals or investments are made.

## Present Value of a Lump Sum

### *Main Menu Name: Discount*

Calculates the value today of a given amount of money to be received at some point of time in the future. The calculation is based on a specific rate of interest that will apply throughout the stated period of time.

Many individuals try to achieve specific financial goals at particular points in the future. For example, a father may want to save \$100,000 in 10 years to pay for his children's education expenses. He wants to know how much he needs to set aside today to meet this goal. This calculation determines the present value of the future lump sum needed to meet this goal.

This calculation is also useful for determining how much should be paid today for an asset that will be received in the future. For example, a person estimates that he will receive a \$200,000 lump sum distribution from a retirement plan in 20 years. Since the distribution will not be received for twenty years, its value is worth much less today. The actual value depends greatly on the interest rate assumed in that 20-year period. If interest rates were high during the 20-year period, less money would have to be invested today to meet the specified future goal.

### **Entering Data**

1. **Expected Future Lump Sum** – Enter the amount of the lump sum that should be saved by a specific time in the future.
2. **Projected Interest Rate** – Enter the interest rate assumed for the specified number of time periods. Interest is compounded each period.
3. **Number of Time Periods** – Enter the number of periods until the lump sum is received. For example, if you are analyzing monthly compounding, enter the number of months until the lump sum is received. It's important to remember to enter an interest rate appropriate to your assumed time period.

### **Results**

The program shows the current value of a specified lump sum that will be received some time in the future. The lump sum is the amount specified at the Expected Future Lump Sum entry field. The calculation assumes that the specified rate of interest remains the same throughout the specified period.



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## Deferred Compensation

### *Main Menu Name: Deferred*

Calculates the future value of deferring current compensation if tax rates are expected to increase. It compares the future after-tax value of the deferred compensation with the amount that would otherwise be accumulated if compensation were received currently, subjected to current tax rates, and invested until the time when it would have been received under the deferred compensation plan.

Using non-qualified deferred compensation arrangements has become more common in recent years. Reasons for this include the following factors:

- The restrictive limits placed on contributions or accruals for the benefit of the highly compensated under qualified retirement plans
- The increasing number of compliance requirements placed on qualified plans
- The desire for more flexible, selective, and cost-effective methods of compensating valuable employees.

While different types of deferred compensation plans are used, most of these plans share some common features. First, nondiscrimination rules of qualified plans do not apply to deferred compensation; therefore, these plans can limit compensation to a select group of employees. Second, these plans apply interest to the deferred compensation to compensate the employees for the time-value of money. Third, deferred compensation is not subject to tax until the employee receives it.

Tax deferral is usually beneficial; however, if an employee's tax rate rises before the deferred compensation is received, the tax deferral may not be advantageous. Unfortunately, predicting future tax rates is difficult, if not impossible.

Generally, if tax rates do not rise, a highly compensated employee will usually fare better deferring some of his compensation until some point in the future. However, if tax rates do rise, an employee who defers compensation will fare better only if he defers payment until the break-even period. The break-even period is the point at which the benefit of deferring the compensation surpasses the higher future tax costs. If the compensation is deferred and the deferral time is long enough, the interest earned on the before-tax amount of deferred compensation will be greater than the cost of the higher tax rate applied to the whole amount when it is received.

### **Entering Data**

1. **Amount to be Deferred** – Enter the amount of the compensation to be deferred.
2. **Current Tax Rate** – Enter the current tax rate.
3. **Number of Years Compensation Will be Deferred** – Enter the number of years the compensation will be deferred.
4. **Assumed Future Tax Rate** – Enter the estimated future tax rate.
5. **Assumed Before-Tax Rate of Return** – Enter the estimated pre-tax rate of return applied to the compensation.

### **Results**

The Summary Tab displays the after-tax sum that will have accumulated both with and without the deferred compensation arrangement at the time when the deferred compensation is scheduled (if deferred). Also calculated is the amount of net gain or loss resulting from the deferred compensation arrangement. Since tax rates could increase at any time before the deferred compensation is received,

three different accumulated values are displayed to reflect three different assumptions as to when tax rates will increase (Early, Middle, Late). The calculation's results assist in determining if it is beneficial to defer compensation rather than receive it today and pay the current tax rate

### **Early**

This column assumes that the tax rate increase occurs immediately after the compensation (not deferred) is paid. In other words, it assumes that the compensation, paid now, is subject to the current tax rate, but all investment earnings on the after-tax amount are subject to a higher future tax rate.

### **Middle**

This column assumes the tax rate increase occurs halfway to the time when the deferred compensation will be received. In other words, it assumes that the compensation is paid now, and the investment earnings on this after-tax amount are subject to the current tax rate for the first half of the period and to the higher future tax rate for the second half of the period until the deferred compensation would be paid.

### **Late**

This column assumes that the tax rate increases just prior to receipt of the deferred compensation. In other words, it assumes that if the compensation is paid now, the investment earnings on this after-tax amount are subject to the lower current tax rate, instead of the higher future tax rate.

The calculation's results also include a break-even analysis table that is accessed by clicking on the Break Even Analysis tab in the lower portion of the input screen. This table shows how many years the compensation must be deferred in order for the deferral to be more beneficial than receiving the compensation immediately. The table reflects investment rates of return ranging from 5% to 20% and various assumed future tax rates. These results are based on the assumption that a tax rate increase occurs halfway to the end of the break-even period.

## Future Value of an Annuity

### *Main Menu Name: Future*

Determines the future value of regular deposits to a bank account, mutual fund, insurance annuity, or any other investment vehicle. It assumes all deposits are of the same amount and that the entire fund earns a consistent rate of return throughout the investment period.

Essentially, calculating the future value of an annuity is calculating “how much money will accumulate if a specified amount is invested annually for a specified number of years.” For example, if an individual saved \$X a year and earned Y% for Z years, how much money accumulates? If the amount accumulated does not meet the individual’s financial goal, this calculation can be used to calculate how much more must be invested each year.

Most calculations, which determine the “future value of \$1.00 per period, assume that the deposit is made at the end of each period. This type of annuity is called an “annuity in arrears.” When an investment calculation is started, the first deposit is not actually made until the end of the first period. For example, if monthly investments will be made and the fund’s starting date is January, the first investment payment is deposited at the end of January. If the investment payments are made at the start of the period (an “annuity due”), the fund will contain a larger sum of money at the end of the period. This calculation determines results for both annuity in arrears and annuity due investments.

### **Entering Data**

1. **Annual Payment Amount** – Enter the amount that will be invested each year.
2. **Annual Interest Rate** – Enter the assumed interest rate that the fund will earn during the investment period.
3. **Number of Years** – Enter the number of years that money will be invested in the fund.

### **Results**

This calculation determines the future value of a series of deposits to a bank account, mutual fund, insurance annuity, or any other type of investment. The calculation assumes that the interest rate specified at the Annual Interest Rate entry field and the annual deposit specified at the Annual Payment Amount entry field remain constant throughout the investment period. Results are displayed for investment payments made at the beginning of the year (Annuity Due) and for investment payments made at the end of the year (Annuity in Arrears).

## Future Value of a Lump Sum

### *Main Menu Name: Compound*

Calculates the value a lump sum will grow to if compounded at a specified interest rate for a specified time-period.

The future value of a lump sum is what each dollar invested today in a bank account, mutual fund, or some other type of investment will be worth at the end of a specified period. The date that the investment is made designates the start of the investment period. The calculation assumes in its calculations that no additional funds will be invested or withdrawn during the investment term, and the rate of return will not change.

The Future Value of a Lump Sum calculation is used to determine how much a sum invested today will be worth when that sum is needed, such as upon retirement or when children are ready for college. The interest rate and investment term has a great effect on the future value of the invested dollars. Higher rates or longer terms result in a greater future value. For example, if \$10,000 is invested at 12% interest for five years, the resulting sum is \$17,623. If the same amount is invested at 13%, or if the term is increased to 6 years, the resulting sum is significantly higher.

### **Entering Data**

1. **Current Lump Sum** – Enter the sum initially invested in the fund.
2. **Interest Rate per Period** – Enter the interest rate applied to the invested amount.
3. **Number of Time Periods** – Enter the number of periods during which the initial sum will be earning interest.

### **Results**

The calculation results shows the future value of a lump sum that is compounded at a specified interest rate for a specified period. The calculation assumes that the interest rate specified in the Interest Rate per Period entry fields remains the same throughout the investment term.

## Deposit Growth

### *Main Menu Name: Deposit*

Shows the effect of compound interest on an investment by showing how money grows at various interest rates. It calculates the future value of money at three different interest rates (compounding every year) for up to 50 years.

This calculation demonstrates the significant effect that compounds interest has on money. It does this by compounding three lump sums at three different interest rates. The calculation also illustrates the importance of shopping around for a higher interest rate. Even a slightly higher rate results in a significantly greater future value. For example, a lump sum of \$10,000 at 10% interest for five years would result in a sum of \$16,105. The same lump sum for five years at 12% interest results in \$17,623, a difference of \$1,518.

### **Entering Data**

Enter up to three investments:

1. **Interest Rate** – Enter the interest rate applied to each investment.
2. **Amount** – Enter the principal amount to be compounded for each investment.
3. **Years of Growth** – Enter the number of years that the money will grow.

### **Results**

The Summary Tab displays the future value of three given sums of money compounded at the three interest rates specified. The results illustrate the effect that compound interest has on a sum of money by showing how the amount increases at various interest rates. Results for the three sums are displayed for compounding periods of 1 to 50 years.

## Life Expectancy

### *Main Menu Name: Life Exp.*

Determines single life and joint life expectancy statistics and probabilities. Since many financial and estate planning problems involve planning for the tax and financial consequences of death, these statistics and probabilities provide important information for designing optimal plans. The results are also useful for illustrating to a client and a client's advisors the urgency of action.

If people knew when they were going to die, they could probably devise close to perfect financial and estate plans. Since no one knows when they will die, financial and estate plans are often based on expectations of what is most likely to happen.

Mortality statistics are often used as a reference to estimate the average remaining life expectancy of an average person at a given age. Mortality statistics are based on the longevity of a large group of people. While these statistics are a useful reference tool, keep in mind two things:

- There is no "average" on which to base average life expectancy actually exists.
- Longevity is affected by many factors (lifestyle, occupation, health problems, family history of longevity, etc.)

Married couples make up a large portion of the individuals involved in financial and estate planning. Therefore, the calculation provides life expectancy statistics for joint life as well as single life. Additionally, various joint life probability statistics are calculated.

This calculation uses three mortality tables to calculate life expectancy. Probability statistics are built in to the calculation. You select which table to use in the calculation. The three tables are:

- **Table 90CM** - This table is the most recent IRS mortality table for determining the gift and estate tax values of various component interests in property. This table is an "average case" table. It takes into account the fact that it is valuing lives for people not self-selected for either longer or shorter than usual longevity. This table may be used starting May 1, 1999 to value annuities, life estates, and remainders. There is an overlapping period between this table and Table 80CNSMT. Either table may be used from May 1, 1999 through June 30, 1999.
- **Table 80CNSMT** - This Table is used for determining the gift and estate tax values of various component interests in property. This table is an average case table. It takes into account the fact that it is valuing lives for people not self-selected for either longer or shorter than usual longevity. This table may **not** be used after June 30, 1999 to value annuities, life estates, and remainders. There is an overlapping period between this table and Table 90CM. Either table may be used from May 1, 1999 through June 30, 1999.
- **Section 1.72 Table** - This IRS table is used to value various components of annuity interests and, in particular, the exclusion ratio for the recovery of cost basis in an annuity contract. This table is a "select" mortality table; it takes into account the fact that it is valuing lives that are self-selected for their potential longevity. It is based on 1983 life expectancies. This mortality table is used to calculate life expectancy for Minimum Distributions calculations.

## Entering Data

1. **Select a Mortality Table** – Select one of the life expectancy tables.
  - Select the 90CM Mortality Table for dates after April 30, 1999.
  - Select the 80CNSMT Mortality Table for dates prior to July 1, 1999.
  - Select the Section 1.72 Mortality Table for Minimum Distributions calculations.

**NOTE:** From May 1, 1999 through June 30, 1999, you have the choice of using the Mortality Table 80CNSMT or the Mortality Table 90CM.
2. **Two Life Calculation** – Select this check box to calculate for two lives. If this check box is not selected, the Individual Statistics for only one person are performed, and the Second Age input field does not appear.
3. **First Age** – Enter the age of the first person as of his closest birthday.
4. **Second Age** – Enter the age of the second person as of his closest birthday. This entry field will not appear if the Two Life Calculation check box is not selected.

## Results

- **If you select Two Life Calculation:** The calculation results show three sets of life expectancy and probability statistics which can be viewed by clicking on the desired tab:
  - Individual Statistics
  - Joint and Survivor Statistics
  - First Death Statistics
- **If you do not select Two Life Calculation:** Only the Individual Statistics results are calculated and displayed. See Individual Statistics to understand the results.

### Individual Statistics Tab

Shows additional years of life expectancy for each individual and each person's age at the end of that life expectancy. It also shows the probability that the individual will live to the end of his life expectancy.

The Individual Statistics also show the age to which a person has a 50% chance of living. This age is called the median age of death. It is the age by which half of a large group of people the same age will have died. Generally, younger individuals have a median age of death that is longer than their life expectancy, while older individuals have a median of death that is shorter than their life expectancy.

Finally, the Individual Statistics results show the probability that each individual will survive the other. This result is important for estate planning purposes and for business transfer and buy-sell purposes.

### Joint and Survivor Statistics Tab

This tab is essential since financial and estate planning often involves problems that occur upon the second of two deaths. This set shows the expected number of years until the 2nd death, the probability that both persons will live that long, the probability that neither person will live that long, the probability that at least one of the two persons will live that long, and the probability that at least one person will die before that long.

Additionally, the Joint and Survivor Statistics results show the age of each person if they survive the expected number of years until the 2nd death, the probability for each person that he will survive to that age, the probability for each person that he will survive to that age and the other person will not, and the probability for each person that he will die before that age but the other person will not. These

results also show the median number of years to the 2nd death. Again, the median number of years to the 2nd death may not be the same as the expected number of years to the 2nd death.

### **First Death Statistics Tab**

This tab is useful when planning for any financial and estate planning problems that may occur when the first of two persons dies. This set is analogous to the 2nd set of results. It shows the expected number of years until the first of two persons dies, the probability that both persons survive that long, the probability that neither person survives that long, the probability that at least one of the two persons survives that long, and the probability that at least one of the two persons dies before that long.

Additionally, these results show the age of each person if they survive the expected number of years until the 1st death, the probability for each person that he will survive to that age, the probability for each person that he will survive to that age and the other person will not, and the probability for each person that he will die before that age but the other person will not. Finally, these results show the age of each person at the median years to the 1st death.



## Chance of Survival

### *Main Menu Name: Chances*

Determines the probability that at least one person in a group of up to ten persons will die before reaching a given age. It also computes survival probabilities based upon a given term. The calculation determines probability using the 90CM Unisex Table (the table used by the IRS for valuing annuities, life estates, and remainders).

Table 90CM, the mortality table used by this calculation, is the table based on the 1990 census. The IRS uses this table to calculate life expectancy and the probability of survival at given ages.

The screen can calculate the approximate 1980 CSO sex-based mortality table probabilities, by applying the appropriate adjustment to the individual's age:

- Male adjustment: add two years
- Female adjustment: subtract four years

### Entering Data

1. **Compute Survival Based on Term** – Select the check box to calculate the probability of at least one of up to ten persons dying before they reach a specified reference age.
2. **Reference Age** – Enter the reference age. The age is used to calculate the probabilities of dying. This entry field appears when the Compute Survival Based on Term checkbox is not selected.
3. **Reference Term** – Enter the number of calendar years. The years are used to calculate the probabilities of dying. This entry field appears when the Compute Survival Based on Term checkbox is selected.
4. **Apply 1980 CSO Gender Adjustment** – Select the checkbox to approximate gender-based calculations based on the 1980 CSO mortality table age adjustments (adding two years for males and subtracting four years for females). Do not select the checkbox if you want to perform unisex calculations.
5. **Age** – Enter the age of each person being evaluated. Use the age of this person as of the nearest birthday. Enter 0 for any person not to be included in the calculation.
6. **Gender** – If the 1980 CSO gender adjustment is selected, then select the appropriate box for Male or Female for each person.

### Results

The Summary Tab displays each individual's probability of dying prior to the age specified in the Reference Age entry field. The program calculates results for up to ten individuals. The results also show the joint probability that at least one of the individuals will die before reaching the reference age.



# Using the Financial Planning Tools

The Financial Planning Tools side of the program gives you over 50 important financial planning models. Each calculation includes reports with graphs and detailed explanations that you can present to your clients. You can also save results to spreadsheets to create more customized analyses.

The Financial Planning Tools is divided into seven sections. Each section contains a list of calculations that pertain to financial planning.

- **Investment**
- **Inflation**
- **Real Estate**
- **Insurance**
- **Net Worth**
- **Financial Goals**
- **Budgeting**



# Investment

## Common Stock Calculator

### *Main Menu Name: Stock*

Common stock represents an ownership (equity) interest in a corporation. Each common stock shareholder is entitled to a proportionate share of the control, profits, and assets of the corporation. Stockholders exercise control through voting rights and receive a share of corporate profits through dividends. In the event the corporation is sold or liquidated, owners of common stock share the net proceeds.

Common stocks have enjoyed a long-run average annual rate of return almost twice that of fixed-income investments. Returns on stocks have averaged nine to ten percent over the last fifty years while fixed-income securities such as corporate bonds and government securities have averaged only four percent.

Gain or loss on common stock is defined as the difference between the amount received on the sale of the stock and the investor's basis, that is, the total cost including commissions paid in buying and selling the shares.

Dividends represent the common stockholders' share in the earnings and profits of the corporation. Cash dividends are generally paid by most corporations on a quarterly basis. "Dividend yield is calculated by dividing the annual dividend rate by the market price of the stock.

The price-earnings (P/E) ratio is the stock's current market price divided by the company's most recent twelve-months' earnings.

### **Entering Data**

1. **Original Purchase Price** – Enter the original price paid for the stock.
2. **Current Market Price** – Enter the current fair market value for the stock (typically the market price). *The Wall Street Journal* is an excellent source for the current market price.
3. **Annual Dividend Per Share** – Enter the annual dividend per share. This information can be found in financial newspapers.
4. **Earnings Per Share** – Enter the earnings per share. For this information consult *Standard & Poor's Stock Guide*, *Moody's Corporate Records*, the *Value Line Investment Survey*, or a company's own annual report. Most of these sources are available in public libraries.

### **Results**

Shows the dollar amount of gain or loss per share, the percentage gain or loss, the dividend yield on the stock, and the price-earnings ratio.

## Comprehensive Bond Calculator

### *Main Menu Name: Bonds*

Calculates five key figures that are useful in analyzing bond investments:

1. The annual interest paid.
2. The gain or loss on the investment.
3. The original amortization (or accretion).
4. The current yield available on the bond.
5. The approximate yield to maturity.

A bond is the legal evidence of a long-term loan made by the bondholder to the corporation that issued the bond. Typically, the loan must be repaid as of a specified date, the maturity date. Until the bonds are redeemed (paid off by the corporation), interest is paid semi-annually by the corporation to the bondholder at a specified rate. The interest rate payable by the corporation is generally fixed when the bonds are issued and does not change during the life of the bond. The interest rate to be paid can be found on the face of the bond itself, or is shown in newspaper listings such as *The Wall Street Journal* under bond trading activity.

Bonds are commonly evaluated on the basis of current yield and yield to maturity. Current yield is the return based on the current market price of the bond and is calculated by dividing the annual interest amount by the current market price of the bond. Yield to maturity is the rate of return on a bond held to its maturity date and redeemed by the issuer at its par value. Yield to maturity includes any gain (or loss) if the bond was purchased below (or above) its par value.

### Entering Data

1. **Face Value of Bond** – Enter the face value of a bond at its maturity. This number is almost always \$1,000 and it is shown on the bond certificate.
2. **Original Purchase Price** – Enter the original price paid for the bond.
3. **Current Market Price** – Enter the current fair market value for the bond (typically the market price). *The Wall Street Journal* is an excellent source for the current market price.
4. **Coupon Interest Rate** – Enter the interest rate on the bond. This rate will be shown on the bond as well as on the purchase confirmation.
5. **Years to Maturity** – Enter the number of years left until maturity. The maturity date will be stated on the bond or can be found in the *Standard & Poor's Bond Guide*.

### Results

The program shows the annual interest paid, the gain or loss on the investment, the original amortization (or accretion), the current yield available on the bond, and the approximate yield to maturity.

## Annual Rate of Return

### *Main Menu Name: Return*

Calculates the compound annual rate of return on an investment. The calculation is based on the present value (or cost) of the investment, the projected future value, and the term or holding period of the investment.

One of the most important factors in evaluating any investment is the rate of return expected. Once this is known (or estimated), a potential investment can be compared with other alternatives. For example, a purchase of common stock might be compared with a real estate investment.

Of the three factors involved in the calculation, only the present value or cost is generally known with certainty, though it may be subject to negotiation. The investment's future value and how long the investment will be held can only be estimated. This lack of knowledge can lead to wide variations in the estimated rate of return from the investment. For example, an investment that doubles in value in five years will yield a 15% (approximately) return while one that takes eight years to double will provide only a 9% (approximately) return.

Risk is another factor that must be taken into account in any investment situation. Investments that involve greater risk should provide higher rates of return to compensate the investor for the increased risk. An investor would be foolish to accept a 7% return from a speculative, high-risk investment when approximately the same return is available from relatively secure certificates of deposit and money market funds.

### **Entering Data**

1. **Present Value Amount** – Enter the present value of the asset or investment.
2. **Expected Future Value Amount** – Enter the expected future value of the asset or investment.
3. **Time Period** – Enter the term or holding period (number of years) for the asset or investment.

### **Results**

The program calculates the compounded annual rate of return on an asset or investment.

## Investment and Cash Flow Analyzer

### *Main Menu Name: Analyzer*

Tracks the life of an investment over forty-five years. It calculates the balance at the start of each year, the income earned in each year, and the balance at the end of each year.

The outcome of any investment program reflects the combined impact of several variables. Some of these are under the control of the investor and others are not. The investor can usually manage the amount of the beginning investment or can begin an investment program without any beginning balance. Additional contributions to the fund also are generally under the individual's control.

Withdrawals may be at the discretion of the investor, but are usually influenced by outside factors as well. For example, a fund may be created to pay for a child's college education. The amount of each withdrawal will depend on tuition charges and other fees that are outside the investor's control. Also, other funds may become available to pay the education costs, and the fund may remain intact.

Another very important factor affecting the value of the fund over time is the rate of return earned on the investment. A high rate of return may allow smaller contributions to be made in order to reach a particular goal. Alternately, a high return may permit larger withdrawals than would otherwise have been expected. A low rate of return may force larger contributions or result in smaller withdrawals.

The time horizon of the investment will also affect the value of the fund. Compound interest is a powerful force, but it normally has its strongest impact of relatively long time periods. The bulk of earnings from interest will come during the last years of an investment period.

The value of this calculation is its ability to show the combined effect of all of these factors, and to allow the user to make changes and determine the impact of those changes on the investment outcome.

### **Entering Data**

1. **Start Year** – Enter the first year of the analysis.
2. **Balance at Start of Year** – Enter the beginning balance of the investment at the start of the analysis (Start Year).
3. **Contributions** – Enter the annual contributions made to the investment for each pertaining year.
4. **Withdrawals** – Enter the annual withdrawals made to the investment for each pertaining year.
5. **Rate of Return** – Enter the after-tax rate of return on the investment.

### **Results**

The annual interest earned on the beginning balance is calculated by adding contributions and subtracting withdrawals and arriving at an ending balance for each year. The ending balance is then carried over as the beginning balance for the following year.



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## Holding Period Return Calculator

### *Main Menu Name: HPR*

Compares two investments with respect to gain (or loss), total return, and holding period return.

Holding Period Return (HPR) is the total return earned from holding an investment from a specified period of time. It represents the sum of current income as well as any gains or losses during the holding period divided by the beginning investment value.

The formula for determining holding period return is:

$$\text{HPR} = \frac{\text{current income} + / - \text{gain (or loss)}}{\text{beginning investment value}}$$

This equation assumes that gain or loss is equal to the ending investment value less the beginning investment value.

HPR provides a quick and simple method for measuring the total return realized on or projected from an investment. The major flaw associated with the use of the HPR method is its failure to consider the time value of money. For instance, assume two investments, each requiring a \$10,000 outlay, each projected to return \$1,000 over a one-year holding period, and each expected to retain its original value. If one of the two returns \$1,000 at the end of six months while the other pays \$1,000 at the end of the year, obviously, the first investment is preferable (assuming equal safety of principal).

Since it is generally best to receive a given return sooner than later, time is a critical factor in the process of evaluation and selection of investments.

### **Entering Data**

1. **Value at Beginning of Period** – Enter the beginning value of investment #1 and #2.
2. **Value at End of Period** – Enter the ending value of investment #1 and #2.
3. **Current Income for Period** – Enter the amount of income or interest earned from the investment.

### **Results**

The gain or loss of the two investments is calculated. Then the program takes any income paid by the investment, and calculates the total return (positive or negative) for each of the two investments. Then, the percentage return (or loss) during the period of each investment is calculated.

## Present Value of Investment

### *Main Menu Name: Pr. Value*

Calculates the present value of annual cash flows from an investment and the cumulative present value based on all cash flows during the life of the investment. The screen illustrates up to fifty years of cash flows.

Present value computations provide quantitative techniques for determining the impact of time on financial decision making. The present value concept is essential in understanding the effect of time on the profitability of an investment, how the projected value of an investment's future economic returns affects the price that should be paid for it now, and how to compute the value of an investment's future economic return.

Investment, by definition, implies a delay in consumption or enjoyment. There must be some compensating reward for an individual to forego current consumption or enjoyment in favor of future consumption. That "profit must be large enough to justify (at least in the mind of the investor) the expected delay." The measure of the profit is typically called the "rate of return" or the "rate of interest."

### **Entering Data**

1. **Discount Rate** – Enter the discount (interest) rate.
2. **Income** – Enter the series of annual cash flows from the investment.

### **Results**

The bottom panel shows the annual present value of each year's expected cash flow. It also calculates the annual discounted cash flow to show (as of the current year) the cumulative present value for the indicated investment period.

## Internal Rate of Return

### *Main Menu Name: IRR*

Calculates an investment's yearly cumulative cash flow position (positive or negative) of an investment, year by year. It also calculates the internal rate of return (IRR) on the investment for periods up to 40 years.

The IRR of an investment is the "discount rate" that causes the present value of future cash flows from the investment to be equal to its current cost. The investment's IRR is used to calculate the percentage rate of return that will be produced by a series of cash outflows and inflows.

IRR computations are used to compare investments or to determine if an investment will be profitable. For example, assume an individual wants to purchase an office building as an investment. Before making the purchase, he should consider the following: (a) the time value of money, (b) the total income that will be received, and (c) funding that will be needed to continue the rent flow (such as repair and renovation costs). He pays \$50,000 in initial outlay, estimates net income of \$10,000 a year, and plans to keep the building for 10 years.

Given these facts, the calculation determines the IRR to be 20.2%. The individual then compares this discount rate to the cost of borrowing money. If \$50,000 can be borrowed for less than 20.2% (and other factors are positive), the investment would be appealing. If the cost of borrowing money were more than 20.2%, the investment would not be profitable.

The IRR approach is not without weaknesses and should be used only in conjunction with other methods of investment analysis. These weaknesses include the following:

- The IRR approach assumes that future cash inflows can be invested at the same rate as the IRR. This rate, in fact, may not be available.
- Cash flows are discounted at the same IRR rate. Occasionally, however, an investor will receive no cash inflow to correspond to a cash outflow. An example of this is leveraged real estate investments. Cash needs must therefore be satisfied with available or borrowed funds. The IRR approach, however, does not recognize the earning rate that money on hand could yield, or the expense incurred by borrowing.
- At times, an investment will produce both positive and negative cash flow, which may cause multiple internal rates of return.

### **Entering Data**

1. **Starting Year** – Enter the starting year (calendar year).
2. **Number of Years** – Enter the number of years for the analysis.
3. **Amount** – Enter the estimated outflows of income for each year. Inflow is entered as usual. Outflow is designated with a minus (-) sign. Forty years of cash flow can be recorded. The first cash flow input must always be negative.

### **Results**

The program computes the cumulative cash flow position (positive or negative) for up to 40 years and also the internal rate of return for each successive and cumulative time period.



# Inflation

## Erosion of Purchasing Power

### *Main Menu Name: Erosion*

Calculates the reduction in purchasing power over time of a given amount of capital (or income) subject to a stated annual rate of inflation.

Inflation is defined as a period of rising prices. This has the effect of making the same amount of goods or services more expensive year after year. This translates into an erosion in the purchasing power of each dollar owned or earned by an investor.

The inflation rate, which is an indication of the rate of change in prices, is commonly measured by the Consumer Price Index (CPI) which is published monthly by the U.S. Department of Labor Statistics. The current index is calculated relative to prices in 1982-84, the base year. The index for 1982-84 was set at a figure of 100, meaning that \$100 would purchase a standard “market basket of goods and services. That same basket of goods and services would have cost the consumer \$152 at the end of May 1990.

While planning for retirement, college funding, or any other long-term goals, it is essential to consider that costs will be higher in the future and that the dollars in a given fund will buy less because of inflation.

### **Entering Data**

1. **Amount** – Enter the amount of capital or income.
2. **Annual Rate of Inflation** – Enter the projected annual rate of inflation.
3. **Number of Years of Erosion** – Enter the number of years to display for the analysis.

### **Results**

The program calculates the reduction in purchasing power of the given amount of capital or income for five annual inflation rates over a 10-year span. The results will display inflation rates that are one and two percent lower and higher than the entered Annual Rate of Inflation, and show time periods five years less and five years greater than the entered Number of Years of Erosion.

## Fundlife Calculator

### *Main Menu Name: Fundlife*

Calculates the length of time money or other assets will last given a specified rate of withdrawal and expected rate of return.

It is essential that the adequacy of a retirement fund or other special fund be tested. Adequacy implies that if money is withdrawn from the fund at a stated rate over a given period of time, that it will satisfy the purpose for which it was intended.

If the analysis shows that a particular rate of withdrawal is too great or the expected rate of return which replenishes the fund is too low, withdrawals may have to be reduced, or a more aggressive investment policy may have to be pursued.

### **Entering Data**

1. **Rate of Withdrawal** – Enter the rate of withdrawal (from 6%-20%).
2. **Expected Rate of Return on Investment** – Enter the projected rate of return (5%-15%).

**Note:** If the Expected Rate of Return is Equal to or Greater than the rate of withdrawal, fund will last indefinitely, or increase over time.

### **Results**

The program calculates the number of years that the fund will last.

## Inflation-Adjusted Income and Asset Analysis

### *Main Menu Name: Assets*

Calculates the effect of a specified rate of inflation on capital where a constant inflation-adjusted income is desired.

Inflation occurs when it costs more to buy goods and services than it did before. More technically, inflation is a rise in the prices of goods and services. The inflation rate is the rate of change in prices.

A primary indicator of the inflation rate in the United States is the Consumer Price Index which tracks changes in prices paid by consumers. Similar measures such as the Producer Price Index measure inflation as it affects suppliers of goods and services.

The following table indicates yearly increases in the CPI:

<b>1999</b>	2.7	<b>1987</b>	4.4
<b>1998</b>	1.6	<b>1986</b>	1.1
<b>1997</b>	1.7	<b>1985</b>	3.8
<b>1996</b>	3.3	<b>1984</b>	4.0
<b>1995</b>	2.5	<b>1983</b>	3.8
<b>1994</b>	2.7	<b>1982</b>	3.9
<b>1993</b>	2.7	<b>1981</b>	8.9
<b>1992</b>	2.9	<b>1980</b>	12.4
<b>1991</b>	3.1	<b>1979</b>	13.3
<b>1990</b>	6.1	<b>1978</b>	9.0
<b>1989</b>	4.6	<b>1977</b>	6.8
<b>1988</b>	4.4	<b>1976</b>	4.8

### Entering Data

1. **Desired Income from Investments** – Enter the desired amount of income per year from an investment.
2. **Income Producing Assets** – Enter the amount of capital available to produce the desired stream of inflation-adjusted income.
3. **Assumed Return on Investments** – Enter the projected rate of return that will be earned on the capital fund.
4. **Assumed Inflation Rate** – The projected rate of inflation.

### Results

The program calculates the future income necessary, year-by-year, to maintain the same purchasing power as the original amount. It calculates the income earned on capital and any capital withdrawal necessary to maintain the desired inflation-adjusted income. And, also calculates the principal balance remaining at the end of each year.

## Income Due to an Investment Fund

### *Main Menu Name: Income*

Calculates the effect of a specified rate of inflation on capital where a constant inflation-adjusted income is desired. Similar to the Assets calculator, this calculator is tax sensitive and can be used to illustrate the impact of income taxes upon retirement planning.

Inflation occurs when it costs more to buy goods and services than it did before. More technically, inflation is a rise in the prices of goods and services. The inflation rate is the rate of change in prices.

A primary indicator of the inflation rate in the United States is the Consumer Price Index which tracks changes in prices paid by consumers. Similar measures such as the Producer Price Index measure inflation as it affects suppliers of goods and services.

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<b>1991</b>	3.1	<b>1979</b>	13.3
<b>1990</b>	6.1	<b>1978</b>	9.0
<b>1989</b>	4.6	<b>1977</b>	6.8
<b>1988</b>	4.4	<b>1976</b>	4.8

### **Entering Data**

1. **Current Fund Value** – Enter the initial value of the fund.
2. **Assumed Rate of Return** – Enter the projected rate of return.
3. **Assumed Inflation Rate** – Enter the projected inflation rate.
4. **Applicable Income Tax Bracket** – Enter the applicable income tax bracket.
5. **Desired After-Tax Income** – Enter the desired income after taxes.
6. **Years of Income** – Enter the projected number of years the income should last.

### **Results**

The program calculates the reduction in fund value, year by year, the earnings generated by the fund before payment of income tax, the annual after-tax earnings, the desired income after adjustment for inflation, and the gain (or loss) in the fund if any.



## College Cost Estimator

### *Main Menu Name: College*

Calculates the inflation-adjusted cost of college education for a stated number of years, the future value of savings already committed to educational objectives, the additional funding required after consideration of any scholarships, grants, or gifts from family members, and the immediate, annual or monthly contribution needed to fund a shortfall.

The average annual cost of tuition, room, and board for a private college was approximately \$10,000 in 1986. Comparable costs for a public institution were approximately \$6,000 a year. Average costs for top Ivy League schools were \$16,000 per year. Obviously, costs will be directly related to the type of school considered. You may want to assume that college expenses will continue to increase about six to ten percent per year as they have done for almost the past thirty years.

### **Entering Data**

1. **Current Annual Cost** – Enter the estimated annual college cost (today's dollars).
2. **Annual Inflation Rate** – Enter the projected annual inflation rate.
3. **Number of Years until First Year of College**– Enter the number of years until the first year of college.
4. **Number of Years of College** – Enter the anticipated number of years of college.
5. **Current Savings** – Enter the amount of current savings committed to college costs.
6. **After-tax Return on Investments** – Enter the estimated after-tax return on investments.
7. **Amount of Future Scholarships, Loans, Grants, etc.** – Enter the estimated amount of future scholarships, grants, and gifts from family members.

### **Results**

The program will calculate the projected, inflation-adjusted cost of college for the given education period. It will determine the future value of capital already saved for education. The program will also add the amount of future funds from other sources such as scholarships and it will calculate the additional amount of funding that is required (lump sum, annual contributions, or monthly investment).

## Lump Sum Needed for Increasing Annuity

### *Main Menu Name: Annuity*

Calculates the lump sum needed at the beginning of a period of time to provide a client with payments which increase by a given percentage each year over the period. It also calculates the single payment (lump sum) immediately necessary, or the annual contribution required to meet the goal, considering the currently available capital.

One of the most important time value calculations available to the financial planner is the “growing annuity.” Using this mathematical concept, it is possible to compute the present value of a growing annuity.

For example, your client wants to provide his wife, in the event of his death, with income possessing the purchasing power of \$50,000 each year for the next 20 years. The problem is that inflation will diminish the purchasing power of a fixed annual income. Therefore, to keep purchasing power up to the \$50,000 a year level, the fund must be able to generate more than \$50,000. Assume that the client feels inflation will average five percent per year, and the fund itself will be able to earn an after-tax return of seven percent. How much life insurance should the client purchase today, assuming that the face amount of the policy is paid to the wife in a lump sum? The necessary face amount is \$785,844.

Two other situations that call for the use of this same calculation are college funding and retirement funding. For instance, suppose a client wants to accumulate a lump sum that will pay \$10,000 in the first year of college. He expects education costs will increase five percent each year for the following three years. Also, he feels whatever fund he creates can earn a net return of seven percent. The calculation indicates he needs a beginning balance of \$36,348.

An example of retirement planning would be similar to the first example. If a retiring client wished to have investment income of \$50,000 annually, which would increase by five percent each year for twenty years, they would need an initial capital of \$785,844 earning a seven percent after-tax return.

### **Entering Data**

1. **Initial Annual Payment Desired** – Enter the desired amount of the first annual payment.
2. **Desired Increase in Annual Payments** – Enter the rate at which future payments from the fund should increase.
3. **Number of Years of Payments** – Enter the number of years the payments will last.
4. **After-tax Return on Investments** – Enter the net-after-tax rate of return on the invested capital.
5. **Target Year for Accumulation** – Enter the target year for the accumulation.
6. **Current Year** – Enter the starting year of the annuity.
7. **Assumed Inflation Rate** – Enter the projected inflation rate for the allotted years of the analysis.
8. **Capital Now Available** – Enter the investment capital currently available.

### **Results**

The program calculates the lump sum needed to provide annual payments that will last the given term of years. The payments from the fund will increase each year by the given growth rate.

## Contributions Required to Reach a Goal

### *Main Menu Name: Contribute*

Calculates the annual, year-end value of an investment if either: the amount of each annual contribution is increased or the specified rate of return on investment is increased.

Among the most important time value calculations available to the financial planner is the “growing annuity.” Through this mathematical concept, it is possible to determine how much a client will have in a fund at the end of each year, if he earns more than a given rate on his investment or he increases the level of his investment each year.

For example, your client wants to accumulate \$100,000 over ten years to send his 8-year-old twin daughters to college. He feels confident he can earn a 7 % rate of return (after taxes). Based on past pay raises, he also believes that he will be able to increase his contributions by the same percentage as his annual pay increases 6 % each year. Using this steady return of an annually increasing contribution, he’ll only need to start with \$5,672. If he earns seven percent on the invested funds, and increases each succeeding annual contribution by just six percent, he’ll reach his \$100,000 goal on time.

Planners should caution clients to express the target amount (\$100,000 in the example above) in terms of “future” rather than “present dollars.” In other words, if the client feels he needs \$100,000 based on the purchasing power of today’s dollars, but also expects inflation between now and then to increase college costs by seven percent per year, the target should not be \$100,000 but rather \$196,715. This is determined by calculating the future value of \$100,000 in ten years at seven percent. (Estate Planning Tools: Future Value of a Lump Sum can be used to calculate this figure.)

Retirement planning also requires an understanding of the growing annuity concept. For instance, assume your client is a participant in a 401(k) plan. Contributions on her behalf are based on a percentage of her salary. If she contributes six percent of her current salary, and her employer matches that amount 50 cents for every dollar, how much will she have when she retires (Factoring in 402(g) limits to deferrals if applicable). If you expect her salary to increase each year by some constant rate, both the employee’s and the employer’s contributions are forms of growing annuities to the fund. If there is currently a balance in the plan account, the future value of that account must be computed separately using the Future calculation (from the Estate Planning Tools) with that result added to the future value computed for the growing annuity.

### **Entering Data**

1. **Future Value** – Enter the desired future value of the investment.
2. **Accumulation Period (Years)** – Enter the number of years that payments will be made.
3. **After-tax Return on Invested Capital** – Enter the after-tax return on the invested capital.
4. **Annual Percentage Increase** – Enter the rate by which the contributions following the initial contribution will increase per year.

### **Results**

The program will calculate the annual future value of the investment fund at the assumed earnings rate and rate of increase in future contributions.



# Real Estate

## After-tax Return on an Investment

### *Main Menu Name: After-Tax*

Calculates the interest expense on an investment, the taxable income, the tax due, the after-tax cash return, the rate of return on the total amount invested, and the rate of return on equity.

Planners must have a great deal of information in order to compare one investment to another, or to judge the relative performance of an investment from one year to the next or over a period of time, or to make “buy” or “sell” decisions.

Here are four major criteria used when making these decisions:

1. **The net cash flow from the investment.** This is extremely important for cash flow management purposes. If the client is not able to realize sufficient net cash from an investment, he or she may not be able to make interest payments on the investment or pay other related expenses. Even if an investment has a rate of return superior to an alternative, the level of net cash flow may be the deciding factor as to which investment should be selected.
2. **The after-tax return on the investment.** In comparing investments, planners often overlook the fact that a client’s wealth or income should only be measured in terms of “the bottom line.” A comparison of investments should always take into account how much the client will have left after payment of income taxes.
3. **The rate of return on investment.** Other things being equal, a client should select the investment that produces the highest rate of return. No investment should be made if the rate of return on the investment is below acceptable levels or negative.
4. **The rate of return on equity.** This may be the best gauge of an investment since the overall rate of return may significantly understate the true value of an investment which provides a positive after-tax cash return and is leveraged. This percentage illustrates the power realized by an investor who wisely uses borrowed money to compound the return on his own.

### **Entering Data**

1. **Amount of Investment** – Enter the amount invested by the client.
2. **Income After Expenses** – Enter the income generated by the investment after actual or estimated expenses.
3. **Loan Amount** – Enter the amount of money borrowed that will be used to finance the purchase of the investment.
4. **Loan Interest Rate** – Enter the interest paid on the borrowed amount.
5. **Client’s Tax Rate** – Enter the client’s combined federal and state marginal tax bracket.

### **Results**

The program calculates the net income, the interest payable, the taxable income, the tax due, the after-tax cash flow from the investment, the overall rate of return, and the rate of return on equity.

## Amortization Schedule

### *Main Menu Name: Amortize*

Calculates year-by-year: the remaining principal balance of a mortgage, the annual principal payment, the annual portion of the payment attributable to interest, the total amount of principal paid during the life of the loan, and the total amount of interest paid for the life of the mortgage.

Mortgage amortization involves the periodic reduction of a mortgage debt over periods of time typically ranging from 10 to 30 years. Interest rates are applied only to the remaining balance on the mortgage debt. Principal and interest are included in monthly payments, which may also include escrowed amounts for real estate taxes, insurance, and other assessment items against the property.

The mechanics of an amortized loan are that the lender calculates the exact amount that must be paid each month (or quarterly, semiannually, etc.) in order to completely amortize (pay off) the principal amount of the loan over the specified time period.

The amortization process continues until the loan is paid off. During this time, the annual interest is first computed on the remaining balance of the mortgage. Then, it is converted to a monthly interest charge by dividing the annual interest by 12 months. This monthly interest is then subtracted from the payment. The balance of the payment remaining is then deducted from the remaining mortgage balance. The result is the new mortgage balance. This is then used to compute the next month's apportionment and charges.

Since the loan balance is larger in the early years, a much larger portion of each payment goes to interest. In later years the greater portion of each payment is credited against principal.

### **Entering Data**

1. **Purchase Price** – Enter the purchase price of the property.
2. **Down Payment** – Enter the amount given as a down payment.
3. **Annual Interest Rate** – Enter the annual interest rate.
4. **First Year** – Enter the first year of the amortization schedule.
5. **Term (Years)** – Enter the number of years it will take to repay the loan.
6. **Months in First Year** – Enter the number of months in the first year of the repayment period.
7. **Annual or Monthly Report?** – Select to view an Annual report or Monthly report. The report is viewed by clicking the Schedule tab.
8. **Monthly Report for Year** – This entry field **only** appears when you choose to view a Monthly Report. Enter any year in the repayment period to view the activity for each individual month.

### **Results**

The program calculates the amount financed, the monthly payment amount, and the number of months in the last year of the payment period.

The program creates an amortization table or report which can be viewed in years or in months by changing the Annual or Monthly Report entry field. Both modes calculate the Month-End Principal Balance, the Monthly Principal Paid, the Monthly Interest Paid, the Principal Paid to Date, and the Interest Paid to Date.

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## Break-Even Period Refinancing

### *Main Menu Name: Breakeven*

Calculates the monthly pretax savings possible through refinancing, the monthly savings through refinancing after tax deductions are considered, and the number of months required to pay off the costs of refinancing and break even.

When mortgage interest rates decline, refinancing (borrowing new money to pay off old debts) may be advantageous. Refinancing may make sense regardless of whether the mortgage is a conventional fixed-rate mortgage or adjustable with monthly payments rising and falling with market rates. Lower fixed rates do lock in smaller payments but total costs should be considered before refinancing.

In the case of fixed-rate mortgages, refinancing should be considered when an interest rate is at least two percentage points below the current rate being paid. This two-point spread is usually the minimum needed to offset refinancing charges.

Refinancing costs include the following items:

- A new title search and title insurance
- New mortgage loan origination fees (usually 1% of the loan amount)
- “Points,” the current fee charged by lenders for mortgage loans (one point equals one percent)
- Recording fees
- Notary fees
- Distribution fees for title company
- Application and sometimes commitment fees for mortgage company
- Appraisal fees
- Credit report
- Possible termite certification
- Possible attorney’s fees
- Possible survey fees
- Possible document preparation fees

The necessary spread increases as the length of time the property will be owned decreases. In other words, a wider spread than two points may be needed if the property will be held only a short period of time. This is because it takes time for lower payments to offset the significant cost of refinancing. Prepayment penalties (illegal in some states) will also increase costs, and therefore increase the spread necessary to make refinancing worthwhile.

Computations must take into consideration the impact of income taxes, and deductions for mortgage interest must be factored into the calculations.

“Recasting,” a concept popularized by Realtor and radio commentator Russell E. Miller, is an alternative for some homeowners. Recasting reduces the interest rate and therefore the monthly payments, but instead of practically starting from scratch, recasting requires only that the present mortgage “note is modified and that a new settlement is not required.” The catch is that the mortgage must still be held in the lender’s investment portfolio, the mortgage must be a direct reduction conventional type loan, and the lender must agree to the recasting.

### Entering Data

1. **Current Monthly Payments** – Enter the current monthly payments made.
2. **Projected New Monthly Payments** – Enter the projected new monthly payments.
3. **Current Tax Bracket** – Enter the current income tax bracket.
4. **Total Refinancing Charges** – Enter the estimated total refinancing (or recasting) charges.

### Results

The program calculates the monthly pretax savings, the monthly after-tax savings, and the number of months of lower payments necessary to break even.



## Mortgage Comparison Schedule

### *Main Menu Name: Compare*

Calculates the monthly payment required to pay off a mortgage over a given period of time and at a given rate of interest. It also calculates the monthly payment, total interest, and total repayment for four percentage points both above and below the rate selected.

Before borrowing to finance, it is imperative that a consumer or investor understands the extent of financial responsibility. Furthermore, “shopping” for a loan reveals stark differences in cost and terms of loans.

For example, a \$150,000 loan at 10 percent interest could be repaid over a 30-year period with monthly payments of principal and interest of \$1,316.36. Total interest paid on the loan would be \$323,890, and the total repayment costs would be \$473,890. The same loan at 9 percent would require monthly payments of \$1,206.93. Total interest would amount to \$284,495 and the total repayment would be \$434,495. At 11 percent the same loan would require \$1,428.49 monthly payments. Total interest would be \$364,256 and the total payments would amount to \$514,256.

### **Entering Data**

1. **Amount of Loan Principal** – Enter the dollar amount that is borrowed.
2. **Annual Interest Rate** – Enter the annual interest rate on the loan.
3. **Term of Loan (Years)** – Enter the number of years given to repay the loan.

### **Results**

The program calculates the monthly payment necessary to amortize the loan over a required period of time based on the given annual interest rate on the loan. The results also shows monthly payments, total interest, and total repayment figures for interest rates above and below the rate that was entered in the Annual Interest Rate entry fields.

## Double Payments on Retirement of a Mortgage

### *Main Menu Name: Double*

Calculates the effect of increasing each monthly mortgage payment by the amount of principal owed that month. The “Double Payment” is not twice the entire mortgage payment, but twice the principal payment plus the interest payment.

Managing installment debt is one of the most complex elements of personal financial planning. Consumer borrowing, from the wise use of credit cards to installment loans, to a home mortgage, plays a significant role in the financial affairs of almost every individual or family. For younger persons it can be more crucial than any investment decisions they might make.

Despite this importance, however, most consumers do not focus enough attention or analysis on their borrowing decisions. Most borrowers simply “shop” their loan for the lowest available rate and generally accept the terms offered by their local lending institutions. Consumers also tend to be somewhat shortsighted in looking for the lowest monthly payment rather than examining the overall cost of the financing.

Even after a loan agreement or mortgage has been put in place, the borrower may benefit enormously by paying more than the regular payment amount. Most installment and mortgage loans allow advance payments or prepayments to be made without any penalty.

One common approach to paying off a home mortgage is to pay double the amount of principal that is due with each payment. This is generally not too burdensome for borrowers during the early periods of the loan since the amount of principal paid with each payment is quite small. It may become more challenging toward the end of the loan period when the principal portion of each payment grows rapidly.

The result of this technique is to effectively cut the borrowing period in half with a corresponding reduction in the interest cost of the loan. The default case shown in the program is for a 30-year, \$100,000 mortgage at an interest rate of 7%. If the borrower were to make the standard 360 monthly payments of \$665.30 each, interest costs of \$139,510.98 would be added to the original principal of \$100,000 for a total repayment of \$239,510.98. However, if the borrower, each month, were to pay the principal and interest due for that month, plus the principal due for the next month, the overall results would be quite different. Using this technique, the loan would be repaid in 15 years rather than 30, and the total interest cost would be \$69,900.87 instead of \$139,510.98. Thus, there would be an interest savings of \$69,610.11.

Should an individual adopt this technique? The answer will depend on a number of considerations both current and future. Among these are current income, expected future income growth, tax considerations (future interest deductions will be reduced), and other investment opportunities. There may also be an emotional benefit from paying off a mortgage in a shorter period of time. Financial planners should discuss all of these factors with their clients in order to help them make the most effective borrowing decisions.

**Entering Data**

1. **Original Loan Amount** – Enter the original amount of the loan.
2. **Loan Interest Rate** – Enter the interest rate on the loan.
3. **Term of Loan (years)** – Enter the number of years given to repay the loan.
4. **Annual or Monthly Return?** – Select to view an Annual report or Monthly report. The reports can be viewed by clicking the Single Schedule tab or the Double Schedule tab.
5. **Monthly Report for Year** – This entry field **only** appears when you choose to view a Monthly Report. Enter any year in the repayment period to view the activity for each individual month.

**Results**

The program calculates the regular monthly payment on the mortgage, assuming it is paid off over the full original term of the loan.

The Single Payment Schedule tab shows how the mortgage is paid off over the full original term of the loan. The schedule can be viewed in years or in months. Both modes calculate the total payments, the interest portion of the payments, the amount of principal repaid, and the remaining balance.

The Double Payment Schedule tab shows how doubling the amount of principal that is due with each payment pays off the mortgage sooner than regular payments. The program creates a table which can be viewed in years or in months. Both modes calculate the total payments, the interest portion of the payments, the amount of principal repaid, and the remaining balance.

## Break-Even Interest Rate Comparison

### *Main Menu Name: Loan Rate*

Calculates the break-even interest rate on a loan, given the after-tax return on the investment and the investor's marginal tax bracket, the after-tax cost of borrowing, and the percentage tax saving from the use of borrowed funds rather than equity capital.

In making any major investment, especially in real estate, financing options must be considered. Investors must decide how much capital to invest, how much can or should be borrowed, what sources of borrowing are available, and what the cost of borrowing would be. Such decisions affect the net cash flow from the investment, its overall profitability, and the rate of return on the capital.

Taxes are important considerations since investment interest payments are deductible, up to certain limits, for income tax purposes. Tax deductibility often makes borrowing a more attractive approach than equity funding because dividends paid to equity investors are not tax deductible. In contrast, dividends paid to equity investors are not tax deductible.

The tax deductibility of interest payments often makes borrowing to finance an investment, referred to as "financial leverage," a more attractive approach than equity funding. However the risk of default on the debt payments, interest and repayment of principal, adds to the overall risk of the project.

Borrowing to finance a project will be attractive as long as the after-tax interest cost of debt is lower than the rate of return on the project. After this point has been reached, equity financing is more attractive.

### **Entering Data**

1. **After-tax Return on Investment** – Enter the after-tax rate of return on the investment.
2. **Investor's Tax Bracket** – Enter the investor's marginal tax bracket.

### **Results**

The program calculates the break-even loan interest rate. This is the point where the after-tax cost of debt just equals the rate of return on the project. The program also calculates the after-tax cost of borrowing, given the investor's tax bracket. And, the percentage tax saving from the use of borrowed funds rather than equity capital.

The program provides interest rates one, four, and six percent above the break-even rate, and interest rates one, two, and three percent below the break-even rate. These variations are useful in comparing different loans, or a single loan with a variable interest rate.

## Mortgage Payment Calculator

### *Main Menu Name: Mortgage*

Calculates the payment necessary to pay off a mortgage over a period of time at a given rate.

Before borrowing to finance, it is imperative that consumers or investors understand the extent of financial responsibility. “Shopping” for a loan reveals significant differences in both cost and terms for the same amount of borrowing.

For example, a \$60,000 loan at 12% interest could be repaid in 30 years with monthly payments of principal and interest of \$617.17. The same loan at 13% interest requires monthly payments of \$663.72. The difference in loan payments over a 30-year period would be \$16,758.

### **Entering Data**

1. **Amount Borrowed** – Enter the amount of money borrowed.
2. **Annual Interest Rate** – Enter the interest rate on the loan.
3. **Length of Mortgage (Years)** – This entry field appears when Calculate Payment is selected. If this field is active, enter the number of years that the mortgage will last.
4. **Fixed Monthly Payment** – This entry field appears when Illustrate Monthly Payments is selected. If this field is active, enter the desired fixed monthly dollar amount paid towards the mortgage.

### **Results**

The program provides two different result screens which depend on whether you click the Calculate Payments button or the Illustrate Monthly Payments button.

- **If you choose Calculate Payments**, the program calculates the annual, semiannual, quarterly, and monthly payments necessary to amortize the loan over a given period of time.
- **If you choose Illustrate Monthly Payments**, the program provides a schedule of fixed monthly payments. The payments are broken down by how much principal and interest is paid per month.



# Insurance

## Rate of Return on Life Insurance

### *Main Menu Name: Life ROR*

Calculates the rate of return realized from a life insurance policy on a year by year basis.

The actual interest credited to a life insurance policy normally exceeds the statutory guaranteed interest rate, typically in the range of three to six percent. Policy duration has a significant effect on actual interest earned; the longer the policy stays in force, the higher the actual credited rate.

The calculation process requires you to know six factors:

1. The cost for the amount of current protection (usually a competitive term insurance rate per thousand dollars of coverage at the attained age of the insured). (Term Rate)
2. The premium amount. (Premium)
3. The dividends paid for the year. (Div)
4. The current cash value. (Face)
5. The cash value one year ago. (Prior CV)
6. The face amount of coverage. (Face)

Following is the formula used to find the rate of return:

$$\text{Rate of Return} = \frac{(\text{cv} + \text{div}) + \text{term rate} \times (\text{face} - \text{cv}) \times (.001)}{(\text{premium} + \text{prior cv})} - 1$$

There is a direct correlation under this formula between the term rate assumed and the rate of return; the higher the term rate, the higher the rate of return.

Taxes are not taken into consideration in this equation. The resulting rate of return is based on a before-tax internal buildup of cash values and should therefore be compared with tax-free bond yields.

### **Entering Data**

1. **Face Amount of Policy** – Enter the face amount of the life insurance policy.
2. **Current Cash Value** – Enter the current cash value of the life insurance policy.
3. **Cash Value One Year Ago** – Enter the cash value of the life insurance policy as of one year ago.
4. **Gross Annual Premium** – Enter the gross annual premium paid on the life insurance policy.
5. **Dividends Paid During Year** – Enter the amount of dividends paid during the year.
6. **Term Rate Per Thousand** – Enter the cost for the amount of current protection.

### **Results**

The program calculates the rate of return (ROR) earned on the life insurance policy for the year.

## Net Cost of Life Insurance

### *Main Menu Name: Net Cost*

Calculates the net coverage, the net coverage per thousand dollars of face amount, the opportunity cost on cash value, the “real” cost of coverage, and the net cost per thousand of coverage.

Life insurance costs are typically calculated in terms of the price per thousand dollars of coverage. To compare two or more policies, it is important to be able to equate each policy payment to be the cost per thousand dollars of protection.

It is easy to compute the cost per thousand of term insurance. Divide total cost per year by the number of thousands of dollars of coverage. For instance, if the policy provides \$120,000 of coverage, there would be 120 units of coverage. If the premium (including any policy fee) is \$280, then the cost per thousand of coverage would be  $\$280 / 120 = \$2.33$ .

Whole life presents a more complicated problem. The problem stems from the fact that policy cash value is involved. An “opportunity cost” is incurred. That is, the cash values, if not “invested in the whole life contract,” could have been put to work elsewhere. Stated in a slightly different manner, the policyholder has allowed someone else (the insurer) to use the money and has deferred personal use until a later date. It is necessary to factor in a “discount (interest) rate” to reflect a conservative after-tax rate of return that (over a long period of time) could have been earned on the money had it not been “loaned” to the insurer.

Current cash value, a key number in the equation, is found in the policy cash value chart. The current cash value is based on the age of the insured person at the time the policy was purchased and the length of time the policy premiums have been paid. The increase in cash value is the difference between last year and this year’s cash value. This number can be obtained from the insurer.

Dividends paid on “participating (mutual) policies must be considered in computing net cost.” Dividends can be considered either by appropriately reducing the premium or by increasing the cash value.

### **Entering Data**

1. **Face Amount of Coverage** – Enter the face amount of the coverage on the policy.
2. **Current Cash Value** – Enter the current cash value of the policy.
3. **Annual Premium** – Enter the annual premium paid on the policy.
4. **Increase in Cash Value this Year** – Enter the current year's increase in cash value.
5. **Discount Rate** – Enter the discount rate of the policy.

### **Results**

The program calculates the net coverage which is derived by subtracting the face amount from the cash value. It also calculates the net coverage per thousand, the opportunity cost on the cash value, the real cost, and the net cost per thousand.



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## Net Clear Death Benefit

### *Main Menu Name: Net Clear*

Calculates the “net clear death benefit” from a life insurance policy and the net proceeds payable in each year. It also highlights the net clear death benefit at the expected age of death which is automatically calculated based on life expectancy tables.

The net clear death benefit is the amount of policy proceeds payable upon the death of the insured, minus the accumulated after-tax outlay at interest. It shows the excess proceeds over and above the client’s outlay with a cost of money factor added in.

For example, a 45-year-old client wants to purchase a universal life insurance policy. He wants to pay ten level premiums, have a death benefit of \$100,000 plus the cash value until age 65, and then switch to a level death benefit. His expected age of death is 83. The accumulated premium plus interest at 6.5% is \$79,171. The death benefit payable is \$131,928, yielding a net clear death benefit of \$52,757.

It can also be likened to a net present value calculation. If the client accumulates the out of pocket cost at a rate of 6.5%, he would have \$89,798. The policy provides a gain of \$42,130. As an “investment,” the client has met the goal of growth at 6.5% plus a gain of the net clear death benefit.

### **Entering Data**

1. **After-Tax Accumulation Rate** – Enter the after-tax interest rate.
2. **Issue Age** – Enter the age of the client when the universal life insurance policy is purchased.
3. **Annual Net Outlay** – Enter the annual after-tax premium cost for the client.
4. **Net Death Benefit** – Enter the annual net death proceeds from the insurance policy.

### **Results**

The program takes the net after-tax outlay and accumulates it at the specified interest rate. It also takes the net death benefit and subtracts the accumulated after-tax outlay to produce the net clear death benefit. The Benefit Schedule tab highlights the net clear death benefit at the expected age at life expectancy.

## Insurance Needs Analysis

### *Main Menu Name: Insure*

Calculates the surplus or deficit in a family's financial security following the death of a "breadwinner." This insurance needs analysis translates income needs to capital needs, combines them with current cash needs to arrive at total capital needs, and then, after considering capital assets, calculates the shortfall, if any, to be insured.

There is no perfect answer to the question of "How much life insurance do I need?" Ultimately, the answer must be, "I don't need any life insurance—but those I love do." So how much do they need? There are two basic approaches, the "human life value" approach and the "capital needs" approach.

The human life value approach evaluates the economic worth of a person to those who are dependent on his or her ability to generate income. Essentially, it assumes death occurs today and measures the economic loss that would have been generated had the individual lived to the end of his or her working lifetime.

The needs approach (some call it the programming approach) analyzes various expenses that must be met if the income provider dies. These needs will vary depending on the composition of the surviving family, their current living standard, and the standard to which they are assumed to adjust.

Capital to pay lump-sum outlays such as illness expenses, burial costs, and estate administration expenses is essential.

Readjustment or transition income that serves as an economic shock absorber allows families to adjust to the death of the breadwinner. Although not essential in absolute terms, this extra income/capital can be of tremendous psychological comfort.

Income for the family while the children are dependent (often called the "dependency period") is another essential.

Special needs for capital or income must be considered. These "special needs" include cash to pay off a mortgage (good to have even if you don't actually use it for this purpose), an "emergency" fund, educational needs, or other special needs such as a handicapped parent or retarded child.

After needs are identified and translated into terms of income and/or capital, it is important to determine sources and amounts of currently available cash. The difference between what is now available and what is needed represents the additional life insurance that should be purchased.

It is important to note that there are weaknesses in both the human life value and the needs approach to the problem. But these flaws are minor. No survivor ever complained that the insured had too much life insurance! Survivors must be protected before they are survivors, or they must learn to live with less or live without.

Consider printing out a number of different assumptions and constructing a "survival level-flourish level spectrum" of insurance needs. Then choose the one that is most affordable from a premium payment viewpoint and from the position of the potential survivors.

### **Entering Data**

1. **Name** – Enter the name of the insured.
2. **Current Cash Needs** – Enter the cash needs upon death that will require immediate payment.
3. **Capital Needs** – Enter the needs for capital funds to produce adequate long-term streams of income.
4. **Capital Assets** – Enter the currently owned capital assets that can be used to produce income.

### **Results**

The program calculates the total cash needs, the total capital needs, the total of currently owned capital assets, and any surplus or deficit.

## Total Cost of Group Term Life Insurance

### *Main Menu Name: Group*

Calculates the cost per month per thousand of group term life insurance, the total monthly cost of group life insurance under IRS tax tables, the total annual cost, the total cumulative cost, and the after-tax cost.

Group life insurance generates a tax cost. The covered employee must report this cost as income. The cost is figured in the IRS's Table I.

Generally, the cost of coverage in excess of \$50,000 is taxable. But if the employee contributes to the cost of insurance, the entire contribution (for coverage up to \$50,000 and for excess coverage) is allocable to coverage in excess of \$50,000. This means each dollar contributed by the employee offsets an otherwise taxable dollar (no carryovers allowed). Key employees are not eligible for this \$50,000 exclusion if the group term plan works in their favor.

Reportable costs increase in five-year bands until they stabilize at age 64. The annual after-tax costs can be surprisingly high. The results should be compared with the cost of individual coverage. In many cases, individual coverage through a competitive product will be less expensive.

### **Entering Data**

1. **Age** – Enter the age of the insured as attained on last day of insured employee's taxable year. (Employees over 64 are treated as if in the 5-year age bracket 60-64).
2. **Amount of Taxable Coverage** – Enter the amount of coverage in excess of the excludible \$50,000.
3. **Tax Bracket** – Enter the marginal tax bracket of the insured employee.

### **Results**

The program calculates the cost per \$1,000 per month, the total monthly cost, the total annual cost, the total cumulative cost and the cumulative tax cost.

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## Business Buyout Analyzer

### *Main Menu Name: Buyout*

The program performs an analysis of funds needed to buy out a business. It calculates the profit needed to pay principal, the sales needed to provide buyout funds, and the net advantage of life insurance.

The program calculates the cost of an installment purchase as an alternative to funding a buy-sell agreement with life insurance. It shows the total premium outlay to fully fund the buy-sell compared with the profits needed if there is no insurance. This assumes that the business or the surviving shareholders buy out a decedent's stock over a period of years in the form of installment payments. It shows the gross amount of sales necessary, at the firm's profit margin, to equal the after-tax profits to pay each installment plus interest.

There are many drawbacks to the installment method of paying for a deceased co-owner's business interest:

- The installment method may not provide the large amounts of cash needed by the client's family to pay federal and state death taxes and other estate settlement costs.
- The financial security of the decedent's family remains tied to the business.
- The cost will be incredibly high, even if interest on the unpaid balance is deductible (it probably will not be in some cases).

It is essential that a client understand the true cost of a non-insured buy-out. For example, assume the purchase of a \$1,000,000 business interest including ten annual principal payments of \$100,000 a year, plus interest on the unpaid balance at 10 percent. If the business buys the decedent's stock, is in a 34 percent tax bracket, and enjoys a 20 percent profit margin, the business will have to earn \$2,065,150 in profits and \$10,325,750 in sales!

### **Entering Data**

1. **Purchase Price** – Enter the purchase price of the business.
2. **Number of Annual Installments** – Enter the number of annual installments
3. **Interest Rate on Unpaid Balance** – Enter the interest rate paid on the balance.
4. **Purchaser's Income Tax Bracket** – Enter the purchaser's income tax bracket.
5. **Profit Margin of Business** – Enter the profit margin of the business (assuming the business will be the buyer). This is the net income the business places into surplus for every dollar in sales. Most businesses do well to net \$.10 to \$.15 on a dollar of sales.
6. **Total Life Insurance Premiums** – Enter the total amount of life insurance premiums over the selected period of time.
7. **Is Interest Cost Deductible?** – Select whether the interest expense is tax deductible or not.

### **Results**

The program calculates the average unpaid balance, the average annual interest payment, and the profit needed to pay each annual installment. It also calculates the average annual profit needed to pay the entire year's installment payment including interest and principal, the total profits needed to provide buyout funds, and the sales needed to generate buyout funds.

## Need for Business Interruption Insurance

### *Main Menu Name: Interrupt*

Calculates the amount of business interruption insurance needed.

Business interruption insurance, often called “use and occupancy insurance,” protects against the loss of income because of the interruption of business when damage to property is caused by specified perils.

The insuring agreement of a business interruption policy states that the policy covers loss resulting directly from interruptions of business caused by damage to or destruction of real or personal property by the insured peril(s). The loss is the reduction in the flow of earnings to the business.

The actual loss of earnings is essentially the reduction in gross income that the firm would have received had no interruption occurred. This means that to determine the actual loss sustained it is necessary to deduct the non-continuing expenses of the business. Reimbursement would continue until the damaged property is restored or could have been restored with due diligence and dispatch.

How large is the potential loss a closely held business might incur? It is necessary first to determine the amount of expenses that would not continue during interrupted operations. These non-continuing expenses are subtracted from the business’ projected gross income. Discounts and allowances are common revenue reductions. Certain employees can be laid off but the salaries of others may have to be continued.

Most firms should periodically reappraise the loss in profits that would occur in the event of a business interruption, and assess the amount of business interruption insurance (or alternatives) that should be carried.

### **Entering Data**

1. **Gross Annual Business Income** – Enter the gross annual business income.
2. **Discounts and Allowances** – Enter the amount of any discounts and allowances.
3. **Net Cost of Merchandise or Stock** – Enter the net cost of the merchandise or stock.
4. **Salary or Wages that May be Stopped** – Enter the salary or wages that may be stopped in the event of a business interruption.
5. **Other Expenses to be Stopped** – Enter any other expenses that may be stopped in the event of a business interruption.

### **Results**

The program calculates the gross earnings of the business and the business interruption insurance needed.

# Net Worth

## Net Worth Analysis and Projector

### *Main Menu Name: Net Worth*

Provides both a current and projected balance sheet. Lists current assets, liabilities, and net worth. Categorizes assets by liquidity. Calculates the percentage of total assets attributable to each asset or liability category. Totals each category. And, projects the value of each asset for four future time periods at a specified growth factor.

Net worth is the most comprehensive statistic that can be used in measuring the financial position of an individual, family, or business. It takes into account all assets, both short-term and long-term, as well as the liabilities that are claims against those assets. Presumably, it shows the amount of money that would be available if all assets were liquidated, and all liabilities paid off, though this is a very unlikely occurrence.

An accurate net worth calculation depends on a careful valuation of all assets, especially personal assets most financial assets, such as savings accounts, certificates, stocks, and bonds. Similarly, liabilities are easy to measure since they are generally represented by some obligation such as a mortgage, bank loan, or account balance. More difficult is placing a value on a home, furnishings, clothing, and other personal possessions such as antiques or collections. Often the value of these can only be estimated or valued through an expert appraisal.

Projecting net worth compounds estimated growth rates over future time periods. Conservative estimates should be used, and it is recommended that projection periods not be longer than ten years. A yearly review of these projections should be carried out to see if past projections have been accurate and to update growth rates according to current economic conditions.

### **Entering Data**

Complete the information that applies to the client:

1. **Name** – Enter the name of the client.
2. **First Year** – Enter the first year of the analysis.
3. **Number of Years to Project Net Worth** – Enter the numbers representing the number of years to be used in projecting net worth.
4. **What year should be graphed?** – Enter the year to be displayed as a graph.
5. Enter an annual growth factor for each asset and each liability which appears in the last four tabs: Liquid Assets, Personal Assets, Other Financial Assets, and Liabilities.
6. Enter the current dollar value for each asset and liability item.

### **Results**

The program totals the projected net worth for all four categories (each tab is a category) and displays these totals for the current year and for the projected years. It also provides an overall net worth total for the current and projected years.

## Security Portfolio Analyzer

### *Main Menu Name: Portfolio*

Lists stocks, bonds, or other financial assets by shares or amount, purchase price, current price, dividend, annual income, current yield, total cost, total value, profit or loss, percentage of total, and purchase date. The program totals the amount invested for all the items entered and it calculates the overall profit or loss. It also calculates yield as a percentage of the total portfolio.

Portfolio analysis seeks to match investment objectives and risk-taking propensity with securities owned. An efficient portfolio provides a mix of securities that affords the highest possible total return (income and growth) consistent with these two key factors and after consideration of the impact of taxes and inflation.

For the astute investor, selection and purchase of appropriate securities is only a beginning step. Implementation and monitoring of the investment policy depends to a great degree on the ability to summarize and update key facts. This template enables you to record and update much of the information essential to personal investment management.

### **Entering Data**

1. **Name** – Enter the name of the client.
2. **Date of Portfolio Summary** – Enter the date of the portfolio (mm/yyyy).
3. **List of Securities** – Click New to add a new security to the list. Click Edit to make changes to an existing security. Click Delete to remove a security from the list.

### **Results**

The program will create a portfolio listing the name of each security, the amount owned, its purchase price, close price, dividend or other annual income. It also calculates the total investment, total profit (or loss), total income, and total yield.



## Taxable Social Security Benefits Under OBRA '93

### *Main Menu Name: Social Sec.*

Calculates the taxable social security benefits under OBRA '93 (effective for tax years beginning after 1993).

The Omnibus Budget Reconciliation Act of 1993 (OBRA '93) greatly affected the rules regarding social security benefits. Starting in 1994, taxpayers may be taxed on up to 85% of their social security benefits. Under the prior law, social security recipients were taxed on up to 50% of their benefits.

The new law applies to taxpayers whose Provisional Income (Adjusted Gross Income, or AGI, excluding social security benefits, plus tax-exempt interest income and 50% of social security benefits) is greater than \$44,000 (married filing jointly) or \$34,000 (single). For those falling into this income bracket, the amount subject to taxation is the lesser of 85% of social security benefits or 85% of the amount of the taxpayer's provisional income over the new OBRA '93 amounts (\$44,000/\$34,000), plus the lesser of \$6,000 (married filing jointly) or \$4,500 (single), or the amount subject to taxation under the prior law 50% inclusion rules.

### **Entering Data**

1. **Social Security Benefits** – Enter the dollar amount of social security benefits received.
2. **AGI (Excluding Social Security Benefits)** – Enter the Adjusted Gross Income.
3. **Tax Exempt Interest Income** – Enter the amount of tax exempt interest.
4. **Filing Status (Single or Joint)** – Select the client's filing status.

### **Results**

The program shows step-by-step how the taxable benefit amount is determined. The calculator does not calculate the amount of tax paid on social security, but this could be done with the additional input of the client's marginal federal tax bracket.

## Periodic Withdrawals from an Investment

### *Main Menu Name: Withdraw*

Calculates the amount of income that can be withdrawn regularly from a fund given a specified interest rate, the number of withdrawals per year, and the given number of years. It also calculates the total of the interest and principal that will be withdrawn over the given period of time, and the total interest to be earned.

Time value calculations are based on five variable components: interest rate, time, present value, periodic payment, and future value.

1. **Interest** can be defined as the price for using someone else's money (it is also used to denote the "discount rate," that is, the cost of exchanging money now for money later).
2. **Time** is the duration of a span or period.
3. **Present value** is the measure of worth placed on money held or received right now.
4. **Payment** is the specified amount of money paid (or received) at regular intervals over the length of "time."
5. **Future value**, the opposite of present value, is the measure of the worth of money to be received at the end of the period of "time."

This calculation is based on the fact that if any three of these variables are known, the unknown variable can be found. The unknown in many retirement or college education plans is, "given a fund of a specified size, and assuming a specified rate of interest, how much can I safely take each year over a specified number of years and just exhaust the fund?" This same unknown occurs in pension and non-qualified deferred compensation planning.

### **Entering Data**

1. **Initial Investment** – Enter the initial investment.
2. **Effective Annual Interest Rate** – Enter the effective annual interest rate of the investment.
3. **Number of Withdrawals per Year** – Enter the number of withdrawals per year.
4. **Number of Years** – Enter the total number of years over which withdrawals will be made.

### **Results**

The program calculates the allowable amount of each withdrawal, the total amount (principal plus interest) to be withdrawn, and the total interest to be earned.

## How Compounding Builds Net Worth

### *Main Menu Name: Compound*

Calculates the value a lump sum will grow to by a target year if compounded at a specified interest (or growth) rate. Calculations are shown not only for the interest rate entered, but also for six additional growth rates. Simultaneously, it illustrates five and ten years before and after the targeted year at each of the seven rates.

The future value of a lump sum equals the growth of that lump sum over a designated period of time. The date of the original investment (or the current date in the case of projecting the growth in a client's estate) marks the beginning of the investment period. Computations assume that no additional investments will be made, that no funds will be withdrawn for the entire time, and that the specified rate of return will be constant over the selected period.

### **Entering Data**

1. **Investment Amount** – Enter the amount of the initial investment.
2. **After-Tax Growth Rate** – Enter the after-tax growth rate of the investment.
3. **Start Year** – Enter first year of the investment.
4. **Target Year** – Enter the target year.

### **Results**

The program will calculate the target year future value of the investment amount entered, using the interest (or growth) rates you have specified. The program will also show three additional growth rates below and above the entered growth rate. And, it will show compounded values for four targeted years.

## Future Value of Increasing Payments

### *Main Menu Name: Future*

Prepares a year-by-year schedule of the value of an investment fund where the initial contribution is increased annually by a stated percentage. The schedule also reflects the after-tax rate of return on accumulated capital over the given accumulation period.

An increasingly useful “time value of money calculation” is the growing annuity. Using this approach, it is possible to determine how much a client will have in a fund at the end of each year, if he: increases the level of his investment each year and earns a given rate of return on his investment.

For example, your client wants to begin accumulating capital for retirement over the next twenty years. She will make an initial year-end contribution of \$2,000 and feels confident she can earn, after taxes, a six-percent rate of return. She is also committed to increasing her contributions by five percent each year. Her contributions and earnings will total \$110,768 at the end of twenty years.

Planners should remind their clients that the resulting amount is in terms of “future” rather than “present” dollars. In other words, the client may accumulate \$110,768, but those funds will not have the same value (purchasing power) in the future as they would have today. For example, assuming a five-percent rate of inflation over twenty years, the present value of \$110,768 is only \$41,747.

### **Entering Data**

1. **Initial Annual Contributions** – Enter the initial annual contributions.
2. **After-Tax Return on Invested Capital** – Enter the after-tax rate of return on the invested capital.
3. **Annual Increase in Contributions** – Enter the annual percentage increase in contributions.
4. **Accumulation Period** – Enter the number of years in the accumulation period.

### **Results**

The program will prepare a yearly schedule (up to 35 years) showing the annually increasing contributions, the total contributions on a cumulative basis, and the total value of the fund including earnings.

# Financial Goals

## Summary of Financial Objectives

### *Main Menu Name: Summary*

Calculates and summarizes the resources needed to accomplish major financial objectives such as funding college education or retirement. It determines the future amount needed after considering a specified inflation rate and a specified rate of return, the annual deposit at the specified rate of return necessary to achieve the goal, the total future amount needed to meet all specified goals, and the annual deposit required to achieve the stated objectives.

The most important step in turning dreams into reality through goal identification is stating objectives in financial terms. Quantifying goals using the “time value” of money has two effects.

First, the process must reflect the negative effects of inflation on funding future goals. One dollar of cost today will equal two dollars in twelve years if inflation takes place at six percent annually.

Second, funds invested today have the benefit of future growth, and larger sums will be available in the future, especially if sheltered from income taxes.

Inflation-adjusted time value calculations show the dollar amount needed now or on an annual basis to reach targeted objectives.

### **Entering Data**

1. **Projected Inflation Rate** – Enter the projected inflation rate.
2. **Projected Return Rate** – Enter the projected return rate on the investments.
3. **Goal** – Enter up to four goals.
4. **Amount Needed** – Enter the amount that is needed to reach the goal(s). This amount should be stated in terms of current dollars.
5. **Years to Go** – Enter the number of years until the funds are needed.

### **Results**

The program provides a total amount of money that is needed (depends on how many goals are entered). Once this amount is known, the program calculates the inflation-adjusted amount needed to achieve each specified goal at the end of its respective time period (accumulation period). It also calculates the annual deposit that is required to accumulate the future amount for each objective.

## Accumulation Planning Worksheet

### *Main Menu Name: Accumulate*

Calculates for any financial goal (such as college funding, retirement, or an extended vacation), the single payment (lump sum) immediately necessary, the annual contribution required to meet the goal considering the currently available capital.

The major difference between a goal and a dream is quantification. The desire for a “comfortable retirement” or “adequate financial security” is a dream; the desire for a specific amount of capital at a specific target date is a goal. That goal will be met by most people only if sub-goals are devised such as “to have \$100,000 on hand in Z years, I must invest a lump sum of \$X today or invest \$Y each year.

### **Entering Data**

1. **Name**– Enter the name of the person(s) or business involved.
2. **Purpose** – Enter the name of the financial goal that the client is trying to achieve.
3. **Target Year for Accumulation** – Enter the year when the goal should be attained.
4. **Start Year** – Enter the current year.
5. **Assumed Inflation Rate** – Enter the assumed inflation rate for the investment.
6. **Assumed Rate of Return** – Enter the assumed rate of return from the investment.
7. **Amount of Capital Desired** – Enter the amount of capital needed to reach the goal.
8. **Capital Currently Available** – Enter the amount of capital that is currently available to meet the goal.

### **Results**

The program calculates the future, inflation-adjusted amount needed to achieve the specified goal, the amount presently available capital that will grow to the given specified earnings rate. The program also provides the balance that is required in the future, the single lump-sum that must be set aside today to fund the future goal, the annual deposit that will accumulate to the sum required.

## Educational Funding Analysis

### *Main Menu Name: Educate*

Calculates, for up to ten children, the annual cost of education, the total cost per child, the total cost for all children, the present value of the future cost per child (what you need today to meet anticipated future needs), and the total present value of education needs.

In 1986, the average annual cost of tuition, room, and board for private colleges was near \$10,000. Costs for public institutions were near \$6,000. Costs for Ivy League schools were \$16,000 per year. When using this calculator, it would be wise to assume that college expenses will continue to increase about 6 to 10 percent per year as they have done for almost the past thirty years.

### **Entering Data**

1. **Name** – Enter the client's name.
2. **Expected Rate of Return** – Enter the rate of return that is expected on investments.
3. **Current Year** – Enter the starting year (current) year of the analysis.
4. **Number of Years** – Enter the number of years until the first child begins college.
5. **List of Children** – Click Add to enter a new child to the list. Click Edit to make a change to an existing child on the list. Click Delete to clear a child off of the list.

### **Results**

The program calculates the total cost per child and the total amount needed for all children. It also calculates the present value of each child's need and the total present value of all education needs. The Yearly Costs tab shows the yearly amount needed for each child.

## Retirement Analysis

### *Main Menu Name: Retire*

Calculates the inflation-adjusted monthly income necessary to meet specified retirement needs, the total income available from projected sources, the surplus or deficit amount of income, the capital required to generate any income deficit, the present value of the capital amount needed to make up any deficit, and the annual payment needed to accumulate the specified capital amount.

The task of providing adequate income at retirement should be divided into three parts:

1. Income from governmental retirement plans.
2. Income from employer-based retirement plans.
3. Income from personal assets.

Taxation and inflation are two factors that must be considered in planning financial independence at retirement. It is therefore important to begin with a “Desired Monthly Income” that considers both inflation and taxation during retirement years.

During our working years most of us can depend on regular wage and salary increases to keep up with inflation. Once retired, however, many income sources will become fixed in amount and be subject to a loss of purchasing power over time. This calculation allows you the option to build in an annual increase in desired income after retirement. The resulting capital need is increased, but the impact on a client’s financial planning will be more realistic.

Retirement security must not depend on governmental or employer-based programs; social security should at best be thought of as a guaranteed income floor, and employer-sponsored programs have often failed due to inadequate funding. An individual can only rely on an adequate capital sum amassed through a disciplined, diversified, and long-term personal investment program.

### Entering Data

Enter information into the General tab and the Source of Income tab to get a thorough analysis.

#### General Tab

1. **Name** – Enter the client’s name.
2. **Present Age** – Enter the present age of the client.
3. **Desired Retirement Age** – Enter the desired retirement age of the client.
4. **Desired Monthly Retirement Income** – Enter the monthly income that the client wishes to have during retirement.
5. **Number of Years Retirement Payments Should Last** – Enter the number of years that the retirement payments should last.
6. **Estimated After-tax Rate of Return** – Enter the estimated after-tax rate of return on investments.
7. **Estimated Inflation Rate** – Enter the estimated inflation rate.
8. **Desired Annual Increase After Retirement** – Enter the desired annual increase after retirement. Enter the value as a percentage.

#### Source of Income Tab

9. **Estimated Monthly Income** – Enter the estimated monthly income for each item on the list.
10. **Age Benefits Begin** – Enter the age at which a benefits will begin for any applicable items.



## Results

The program calculates the number of years until retirement, the monthly income needed after inflation adjustment, the balance, if any, necessary to meet the specified income goal, and the annual and monthly amounts that must be set aside in addition to currently available sources to meet the specified income objectives.

The Schedule tab takes the total income that would be available from present income producing sources, and subtracts it from the desired income for each year, and the resulting dollar amount is what is needed to reach the desired income.

## Social Security Benefits

### *Main Menu Name: Security*

Calculates the present value of social security benefits for a surviving spouse and/or each child or children, and the total present value of all future social security payments.

Significant benefits are payable to the survivors of a deceased insured worker:

Monthly benefits are payable to a surviving spouse as “mother’s or ‘father’s” benefits.” This payment is made to the widow or widower regardless of age, assuming that the person is caring for at least one child who is under age 16 or who was disabled prior to age 22. Note that benefits for children age 18-22 who attend college or post secondary school were completely phased out in April 1985.

- A child’s benefit is payable monthly for each child who is under age 18 and for children over age 18 who were disabled prior to age 22.
- A widow(er) benefit is payable monthly to the surviving spouse (or surviving divorced spouse) of an insured worker when the survivor is age 60 or older.
- A disabled widow(er) benefit is payable monthly for a disabled surviving spouse aged 50 to 60.

Up to one half of the social security benefit received by taxpayers whose incomes exceed certain base amounts is subject to income taxation.

### **Entering Data**

1. **Name of Spouse** – Enter the name of the client’s spouse.
2. **Age** – Enter the age of the spouse.
3. **Projected Interest Rate** – Enter the projected average interest rate.
4. **First Year** – Enter the starting year of the analysis.
5. **Number of Years** – Enter the number of years the analysis should cover.
6. **Children** – Enter the number of children, if any, assumed to be survivors eligible for social security (valid inputs are 0-9). Remember: a child’s benefit is payable monthly for each child who is under age 18 and for children over age 18 who were disabled prior to age 22.

### **Results**

The program calculates the present value for each category of social security payment, and the total present value of all future social security payments.

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## Federal Estate Tax Discount

### *Main Menu Name: Discount*

Calculates the discount obtained through a judicious purchase of life insurance as a means of paying the federal estate tax and other estate settlement costs. It also compares the cost per thousand dollars of death proceeds to premiums at the end of one, five, ten, and twenty years. And finally, it calculates cash available for new savings or investment.

Federal estate taxes were designed to be extremely progressive for the purpose of redistributing wealth. Rates in 1987 and later range as high as 50 percent. Yet it is possible to pay these taxes (and other estate settlement expenses) at a “discount” through judiciously arranged life insurance.

Life insurance, if owned by a third party who is also the beneficiary, has a number of advantages. It is:

- Income tax free.
- Estate tax free if death occurs more than three years after any actual or constructive transfer of the policy by the insured.
- State inheritance tax free.
- Probate cost free.
- Not subject to administrative or transfer charges.

These factors alone would make life insurance a favored vehicle for the payment of the federal estate tax.

In addition to the fact that the modest estate owner can use life insurance to create an “instant estate,” it has another important advantage. Life insurance is purchased on the “self canceling debt installment” plan. In essence paying premiums on life insurance provides, in advance, full payment of many debts, including federal estate tax. At the death of the insured, even though the premiums stop, the proceeds (and therefore the debt) are paid.

Consider the amount of the “discount” when only a few premiums have been paid before the insured’s death. Even if many years’ premiums have been paid, the payment of the proceeds is payment of the estate tax (and many other costs) at a discount.

### **Entering Data**

1. **Amount Payable** – Enter the benefit payable from life insurance at the end of years 1, 5, 10, and 20.
2. **Cumulative Premiums** – Enter the cumulative premiums paid through years 1, 5, 10, and 20.
3. **Cash Value** – Enter the total cash value(s) for years 1, 5, 10, and 20.

These figures can readily be obtained from a life insurance policy ledger statement available at no cost from most life insurance company home offices.

### **Results**

The program calculates the cost per dollar for proceeds paid, the tax-free proceeds paid in excess of premiums, and the policy cash value in excess of premiums.

## Present Value of Future Retirement Benefits

### *Main Menu Name: Benefit*

Calculates the present value of future retirement benefits. The present value of retirement benefits is determined as of the retirement date. The expected future value of retirement benefits (considering mortality) is then discounted back to its present value as of the current date. A final adjustment is made for taxes to be paid on the monthly benefits.

Financial planners are often faced with valuing assets that are not presently in hand, but will be available at some future date. Life insurance proceeds are examples that are fairly direct, where expected amounts are known with certainty. Another more complicated situation involves estimating the present value of monthly pension benefits to be received during some future retirement period. The need to value these benefits commonly occurs in divorce cases and other financial planning situations.

Determining the present value of future retirement benefits is complex due to the uncertainty of survival to the retirement period, the unknown number of monthly payments to be received, interest rate variations over these periods, and the taxes that have to be paid once these benefits are received. Combining all of these estimates to obtain a single present value is admittedly guesswork, but by varying the inputs, a planner can obtain a decent estimate of the current value of future pension payments.

### Entering Data

1. **Present Age at Nearest Birthday** – Enter the client's age as of the nearest birthday.
2. **Desired Retirement Age** – Enter the desired age for retirement.
3. **Accrued Vested Monthly Retirement Benefits** – Enter the accrued vested monthly retirement benefit.
4. **Discount Rate Applied to Retirement Benefits** – Enter the discount rate applied to retirement benefits.
5. **Estimated Tax Rate on Monthly Benefits** – Enter the estimated income tax rate that is applied to the monthly benefits.
6. **Table** – Select a mortality table to compute life expectancy and probability statistics. Select Table V for dates prior to May 1989. For dates between June 1989 and April 30, 1999 use the 80CNSMT mortality table. For any dates after and not including June 30, 1999, the program will automatically use the 90CM mortality table. You have the option of using table 80CNSMT or table 90CM for dates May 1, 1999 through June 30, 1999.

### Results

The program calculates the individual's life expectancy, the expected number of months of retirement benefits, and the expected value of the retirement fund at retirement age. The value of the fund is then adjusted for the probability the individual will live to retirement age. The adjusted value of the fund is then discounted to its present value at the individual's current age.

Finally, estimated taxes are subtracted from the present value to give an after-tax present value of the expected future retirement benefits.

# Budgeting

## Income and Expenses Report

### *Main Menu Name: Budget*

Serves as a statement of income and expenses. It calculates the percentage of income and expenses attributable to each item, as well as cash available for new savings or investment. The calculator totals annual income, fixed and variable expenses.

Budgeting can be defined as the ability to estimate the amount of money to be received and spent for various purposes within a given time frame. From a planning perspective, budgeting is a deliberate program for spending and investing available resources. It is both the starting point for financial planning and the yardstick against which actual investment results can be measured.

Budgeting starts with a working budget model, in essence a financial “X-ray” of what is occurring now. This is accomplished by summarizing income sources, listing expenditure categories, and breaking down various sources of income by percentages.

Expenses should be subdivided into “fixed” and “discretionary” expenses. Fixed expenses are essential and not significantly reduced without an uncomfortable change in living standard. Discretionary expenses may be eliminated or curtailed within a relatively short period of time. Both types of expenses must be totaled and shown as percentages in order to illustrate “where the money is going.”

The final step is to compare total annual income and expenditures to determine net saving or net borrowing in terms of both dollars and a percentage.

Once the mathematics are completed and analyzed, pragmatic approaches must be found to increase income, decrease spending, or both in order to increase financial security through additional (or more appropriate) investments.

Consider three printouts, one based on the way things are now, the second on a “lowest potential income—highest likely expenditure” situation, and a third on a “highest likely potential income—lowest likely expenditure” situation.

### **Entering Data**

The Income and Expenses Report has three tabs that must be completed (Annual Income, Fixed Expenses, and Variable Expenses). Most of this information may be obtained from cancelled checks, pay stubs, charge account receipts, or any other documentation relevant to any particular income or expense.

### Helpful Hints for Entering Data

- Enter Income amounts on a before-tax basis.
- For **Income Taxes**, include federal, state, and local taxes.
- For **Real Estate Taxes**, include both real and personal property taxes.
- For **Medical/Dental Expenses**, include health insurance premiums and all other non-reimbursed medically related expenses.
- For **Debt Repayment**, include the total of all installment loans, auto loans, and other loans for which there is a specific contractual obligation.
- For **Contributions, Gifts**, include not only tax deductible donations to recognized charities but also non-deductible gifts to family members and other individuals.
- For **Savings**, include any amounts intended for unplanned emergencies and major purchases such as a car, central air, etc.
- For **Investments**, include any long-term goals such as college education and retirement.

### Results

The program calculates the percentage of each category (annual income, fixed expenses, and variable expenses) attributable to each income and expense item. It totals the entries in each tab and calculates the net amount available for future savings or investment.

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## Monthly Cash Flow Report

### *Main Menu Name: Cash Flow*

Provides a one-year, month-to-month, listing of expenses that can be scheduled in advance. It totals the expenses by item and by month and provides a cash flow analysis of income and revenue on a monthly basis. The program also provides an annual summary of revenue and expense.

Aside from a balance sheet, the most important document necessary for financial planning is a statement of income and expenditures. This is essential to assess the present economic health of a client, to determine the extent of any excess discretionary income available for investing, and to control the timing of income and outgo.

Proper planning requires that you use comparative income and expense statements as a tool to determine the following items:

- The stability, reliability, and predictability of income and expenses.
- The potential for income growth.
- The relationship between income and lifestyle. For example, does income flow match standard of living?
- The relationship between income and investment accumulation. For example, how long has the present income level been maintained and has the level of investment risen with income growth?

We tend to forget the level and nature of our expenses. Consider which expenses are “excessive” and the extent to which the present levels of outlays have mortgages the future.

Timing is as important as tracking the amount and nature of income and expenditures. Although it is impossible (and unnecessary) to follow every dollar, it is essential that the timing of major sources of income and expense be recorded so that cash flow management can be aligned with personal objectives.

### **Entering Data**

Enter the data into the two tabs (Expenses and Revenue) to get the monthly cash flow report.

#### **Expenses Tab**

1. **Name** – Enter the name of the client.
2. **Year of Expenses** – Enter the year of the expenses.
3. **List of Expenses** – Click Add to enter a new expense to the list. Click Edit to make a change to an existing expense. Click Delete to remove an expense from the list.

#### **Revenue Tab**

1. **Beginning Balance** – Enter the beginning balance.
2. Enter the revenue earned for each month.

### **Results**

The program gives a total of the expenses on a month-to-month and annual basis while calculating the “ending balance” for each month and for the year.

## Dividend and Interest Income Report

### *Main Menu Name: Dividend*

Provides a month-to-month report on the income flow for up to 20 investments. It also calculates the percentage of the year's income received each month.

Common stock represents an equity position in a corporation. Stockholders are entitled to a proportionate share of the corporation's "C/P/A," that is, Control (through voting rights), Profits (through dividends), and Assets upon a sale or liquidation.

The size of a corporation's dividend is based primarily upon two factors: the earnings of the corporation and the firm's need (or the shareholders' desire) to retain and reinvest some portion of profits in company operations. Publicly traded corporations usually pay out a significant portion of each year's earnings, while closely held corporations typically retain a higher percentage to shield shareholders from double taxation.

Dividends may be paid in cash or in stock. When a stock dividend is paid, investors physically receive more shares based on a percentage of the stock they own. This means an investor with 100 shares of stock in a company will have 112 if there is a 12 percent stock dividend. Funds from the corporation's retained earnings account are then transferred from retained earnings to the capital stock account.

Dividends are fixed on the date of record and are then paid only to those who owned stock on that date. The day following the date of record is called the "ex-dividend day." Starting on the ex-dividend day, the stock trades without the dividend, and the stock's price will often drop by the amount of the dividend. Actual payment of a dividend is sometimes weeks after the date of record.

No dividends may be paid on common stock in any year or cumulative years in which the full dividend has not been paid on preferred shares.

Debt securities can be found in two general forms: short term and long term. Short-term debt issued by corporations in the form of "commercial paper" and is sold at a discount from its face value. Upon maturity, investors receive the full face value amount. Most commercial paper matures in less than nine months. CDs, "certificates of deposit," are another commonly owned type of short-term debt. These are deposit liabilities of a bank or savings and loan. CDs mature in less than a year and differ from commercial paper because they are interest bearing and not sold at a discount.

Bonds represent the long-term debt of corporations. They generally pay interest semiannually and repay the principal at a predesignated date, from 5 to 30 years from issuance.

### **Entering Data**

1. **Name** – Enter the name of the client.
2. **Date** – Enter the date of the analysis.
3. **List of Investments** – Click New to enter a new investment. Click Add to make changes to existing investments. Click Delete to remove an investment from the list.

### **Results**

The program calculates the amount of income received from investments on a month-to-month basis, the percentage of annual income received in each month, and the total income received from each listed security.



## Term of Loan Calculator

### *Main Menu Name: Loan Term*

Calculates the term of a loan and the repayment period, for two different monthly payment amounts, given the loan balance and interest rate, and also calculates the difference in the repayment periods in months.

Consumer borrowing has become one of the most important dimensions of personal financial planning. Using credit wisely can be just as important to an individual's financial security as saving for retirement or having the right insurance coverage. Evaluating credit terms can be a complex problem involving the amount borrowed, the interest rate to be paid, and the term of the loan.

Financial planners can assist clients with their borrowing decisions by analyzing the effect of making larger or smaller payments on a loan. Generally, making even slightly larger payments can shorten the term of the loan and substantially reduce the total interest paid on the loan.

### **Entering Data**

1. **Principal Balance Outstanding** – Enter the principal amount balance outstanding.
2. **Loan Interest Rate** – Enter the interest rate on the loan.
3. **Current Monthly Payment** – Enter the current monthly payment.
4. **Projected Monthly Payment** – Enter the projected monthly payment.

### **Results**

The program calculates the loan term (in months) based on the current as well as the projected monthly payment. It also calculates the increase or decrease in loan term depending on whether a smaller or larger payment is to be made, and the interest savings realized from making larger monthly payments on the loan.

## After-Tax Return and Cost Calculator

### *Main Menu Name: Marginal*

Calculates the after-tax rate on an investment, and the net after-deduction cost of borrowing. It accounts for both federal and state taxes.

The term “marginal tax bracket” means the tax rate that is multiplied by the taxable income in excess of income taxed at the next lowest bracket. The term “combined marginal tax bracket” is the highest rate on which taxes are collected. It is important to remember that this includes not only federal taxes but also state income taxes as well.

Assuming a deduction is allowed against the federal income tax for state income taxes paid, the following formula is used to find the combined federal and state marginal bracket:

$$\text{CMTB} = F + S (100\% - F)$$

Where:

**CMTB** = Combined Marginal Tax Bracket

**F** = Federal Tax Bracket

**S** = State Tax Bracket

To calculate the CMTB of individuals who do not itemize their deductions, add the federal bracket and the state bracket together.

Knowledge of the combined marginal tax bracket is essential in realistically appraising either the true return on an investment or the net cost of borrowing for investment purposes. This concept is basic to financial analysis. For instance, if an individual has a combined federal and state bracket of 34%, and 10% before-tax return on investment equates to an after-tax return of 6.6%.

The same principle applies to the extent the interest paid on an investment can be compared with the after-tax cost of financing that asset, it is easier to decide whether or not to borrow money to finance the investment or even to make the investment at all. Obviously, the greater the spread between the after tax return and the after tax cost, the more likely investment results will be positive.

### **Entering Data**

1. **Federal Tax Bracket** – Enter the applicable federal tax bracket for the client.
2. **State Tax Bracket** – Enter the applicable state tax bracket for the client.
3. **Before Tax Return on Investment** – Enter the estimated before tax return on investment.
4. **Before Deduction Borrowing Rate** – Enter the borrowing rate before deduction.

### **Results**

The program calculates the combined marginal income tax bracket, and it determines the after-tax rate of return actually earned on an investment, and it calculates the net cost of borrowing.

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## Cost of an Outlay

### *Main Menu Name: Outlay*

Calculates the cost of an outlay to an individual or corporation if the outlay is nondeductible. It also calculates the cost to an individual or corporation if an outlay is deductible.

For each dollar earned above certain amounts, taxes must be paid by either individuals or corporations. For each dollar deductible by either individuals or corporations, taxes are reduced.

An outlay which is nondeductible requires that the taxpayer earn more than enough to make the outlay. Therefore, the true “cost of the outlay” is the actual dollar amount of the outlay plus the tax that had to be earned to net an amount equal to the outlay. For example, suppose a taxpayer was in a combined marginal tax bracket of fifty percent. a \$10,000 nondeductible purchase would “cost” \$20,000. In other words, the taxpayer would have had to earn \$20,000 to pay the tax of \$10,000 and have another \$10,000 left to make the purchase.

An outlay which is deductible requires that a taxpayer earn less than the amount needed to make the outlay. Why? Because money saved in taxes (that otherwise would have been paid to the federal or state government) is available to defray the cost of the purchase. For example, suppose the taxpayer in the illustration above purchased a deductible item. The cost to a taxpayer in a top combined bracket of 50 percent who purchases a deductible item with a cost of \$10,000 is only \$5,000. This is because \$5,000 in taxes that otherwise would have been paid will not have to be.

Keep in mind that both situations depend on the top rate at which tax will be paid or a deduction will be allowed. This is the CMTB, the combined marginal tax bracket, and considers both federal and state income taxes. If you need help calculating the CMTB, use the After-Tax Return and Cost Calculator (Marginal).

### Entering Data

1. **Proposed Outlay** – Enter the dollar amount of the proposed outlay.
2. **Individual’s Combined Marginal Tax Bracket** – Enter the top marginal combined bracket of an individual taxpayer (if applicable). If you do not already know the Combined Marginal Tax Bracket (CMTB), use the After-Tax and Cost Calculator (Marginal) to calculate it.
3. **Corporation’s Combined Marginal Tax Bracket** – Enter the top marginal combined bracket of a corporate taxpayer. If you do not already know the CMTB, use the After-Tax and Cost Calculator (Marginal) to calculate it.

### Results

The program calculates the cost of a specified outlay to an individual assuming the outlay is nondeductible and deductible. It also shows the cost of a specified outlay to a corporate taxpayer assuming the outlay is nondeductible and deductible.

## Extra Loan Payment Analyzer

### *Main Menu Name: Extra Pay*

Calculates the effect of making extra payments on a loan.

Borrowing money is something that most of us do more than once during our lifetimes. Few of us can buy a home or a car, send our children to college, or take an expensive vacation without borrowing some part of the money to pay for it. Even if other funds are available, borrowing may be financially advantageous once tax and investment factors are considered. Interest charges may be deductible against taxable income, and current investments may provide a very attractive rate of return and should not be liquidated.

Deciding when to borrow, how much, at what interest rate, and from which lender can be a very complex financial decision. So-called “truth-in-lending” laws require banks, savings and loans, finance companies, and other lenders to provide borrowers with essential information on their loans. This information includes the principal amount, the rate of interest charged, the regular periodic payment (normally a monthly payment), and the number of payments required in order to pay off the loan. They are also required to state the total amount of interest that will be paid during the life of the loan.

Frequently borrowers may wish to pay more than the regular payment on their loan. Extra payments during the term of the loan can considerably reduce the total amount of interest paid and will result in paying off the loan sooner than originally scheduled. Even a few extra payments can have a dramatic effect on interest paid and the life of the loan.

Borrowers should determine whether or not they can afford to make extra payments, and if so, when and in what amount. It isn't necessary to make large extra payments in order to have a substantial effect on the loan. A few extra dollars each month, or an occasional extra payment, can be just as important to paying off the loan prior to maturity.

### **Entering Data**

1. **Principal** – Enter the original principal amount of the loan.
2. **Term (Months)** – Enter the term of the loan (up to 60 months).
3. **Interest Rate** – Enter the annual interest rate charged on the loan.
4. **Extra Amount** – Enter the amount of any extra payments on the loan.
5. **First Month of Extra Payments** – Enter the month when the extra payments will begin.
6. **Last Month of Extra Payments** – Enter the last month of extra payments.

### **Results**

The program provides a total of the payments, interest, standard principal, and extra principal paid over the selected number of months. It also calculates the standard monthly payment for the loan. This payment will be broken down into two amounts, the monthly interest paid and the amount applied toward the principal balance of the loan. Finally, the program reflects any extra principal payments that are made and determines the outstanding principal balance at the end of each month.





### Reg. §25.7520-3(b)(2)(v), Example 5

Eroding corpus in an annuity trust. The donor, who is age 60 and in normal health, transfers property worth \$1,000,000 to a trust. The trust will pay a 10 percent (\$100,000 per year) annuity to a charitable organization for the life of the donor, and the remainder is to be distributed to the donor's child. The section 7520 rate for the month of the transfer is 6.8 percent. Because the 10 percent annuity payout rate exceeds the 6.8 percent income and growth rate that the trust is expected to experience each year, the annuity payout must be assumed to progressively erode the corpus. Using an interest rate of 6.8 percent, an annuity payout of \$100,000 per year will exhaust a \$1,000,000 trust corpus in 18 years. The final payment at the end of the 18<sup>th</sup> year will consist of a partial payment of \$32,712. Under section 7520, the standard life annuity factors are based on the assumption that any person may survive until age 110. This means that the standard life annuity factor for age 60 (9.8585) takes into account the separate probabilities that a person age 60 may survive to receive each of 50 different annuity payments. However, in the present case, because of the eroding corpus, the person age 60 can be assumed to receive no more than 17 \$100,000 annuity payments, regardless how long that person might survive. Therefore, the standard life annuity factor for a person age 60 (9.8585) is not applicable in this case, and special section 7520 annuity factors that take into account the 18-year limitation on the annuity payout must be used. The special annuity factor for the present value of the right to receive \$1.00 per year for 17 years or until the prior death of a person age 60 survives is \$.1836. The present value of the charitable annuity interest is \$867,269 (\$100,000 x 8.6121 plus \$32,712 x .1836).

### Exhausting Annuities

The following is an in-depth discussion of how the calculation is performed.

The value of an exhausting annuity can be calculated by breaking it down into two separate parts. The first part is the portion of the annuity that does not exhaust. The second part is the final payment made in the period that the annuity exhausts.

§25.7520-3(b)(2)(v), example 5 describes a case where a donor, age 60, sets up a \$1,000,000 trust to pay a 10% annuity for the life of the donor. The §7520 rate used is 6.8%. This annuity is calculated to exhaust in 18 years, with a final payment in year 18 equal to \$32,712. To value this annuity, break it down into two separate parts: \$100,000 lasting for 17 years; and a single payment of \$32,712 in the 18<sup>th</sup> year. Once the pieces are known, value each one individually and then add them together. The annuity factor for an annuity lasting for the shorter of 17 years or until the prior death of a person age 60 is 8.6121. The annuity factor for the shorter of 18 years or until the prior death of a person age 60 is 8.7957.

Given these factors (which can be obtained from example 11 in IRS Pub. 1457), the valuation of the annuity is:

$$\begin{aligned}\text{Value} &= [\$100,000 * 8.6121] + [\$32,712 * (8.7957 - 8.6121)] \\ &= \$861,210 + \$6006\end{aligned}$$

$$= \$867,216$$

Of course, these numbers get more complicated when the annuity is payable more frequently than annually, but the basic methodology is still the same. For example, take the above case, but make it payable quarterly instead of annually. Now the \$100,000 payments only last 16½ years. The final payment, made in the 3<sup>rd</sup> quarter of the 16<sup>th</sup> year, is \$5,414.41. Transforming this single payment into an annual amount by multiplying it by the number of payments per year (in this case 4), yields an annuity of \$21,657.64 lasting 16¾ years. Valuing partial-year annuities requires interpolation. An annuity lasting 16½ years is valued by taking ½ the value of the same annuity lasting for 16 years plus ½ the value of it lasting for 17 years. An annuity lasting for 16¾ years is valued by adding taking ¼ the value of the same annuity lasting for 16 years plus ¾ the value of it lasting for 17 years. Getting back to the example:

$$\begin{aligned}\text{Annuity Factor for } 16\frac{1}{2} \text{ years} &= (\frac{1}{2} \times 8.4055) + (\frac{1}{2} \times 8.6121) = 8.5088 \\ \text{Annuity Factor for } 16\frac{3}{4} \text{ years} &= (\frac{1}{4} \times 8.4055) + (\frac{3}{4} \times 8.6121) = 8.56045\end{aligned}$$

Of course, the frequency of payments still has to be taken into account. The payout frequency factor from Table K (IRS Pub. 1457) is 1.0252. Therefore, the annuity is valued:

$$\begin{aligned}\text{Value} &= 1.0252 \times [\$100,000 \times 8.5088] + [\$21,657.64 \times (8.56045 - 8.5088)] \\ &= 1.0252 \times (\$850,880 + \$1,118.62) \\ &= \$871,468.99\end{aligned}$$

The above examples ignore the calculation of both when the annuity exhausts, and the amount of the final payment. These two numbers, however, are critical to calculating a proper annuity valuation. The program provides two different methods for calculating these numbers: the Exact Method and the IRS Annuity Factor Method.

The **IRS Annuity Factor Method** is the method the IRS used in §25.7520-3(b)(2)(v), Example 5. This method finds the highest term that yields a term-certain annuity value less than the initial value of the trust. This term is equal to the number of years that full payments last. Repeating this technique for the number of periods in the final year gives us the number of periods in the final year which have full payments. Once the term of the trust is known, the term certain annuity factors are used to calculate the value of the final annuity:

- 1) Calculate Term Certain Annuity Factors:  
Factor for 16½ years =  $(\frac{1}{2} \times 9.5731) + (\frac{1}{2} \times 9.8999) = 9.7365$   
Factor for 16¾ years =  $(\frac{1}{4} \times 9.5731) + (\frac{3}{4} \times 9.8999) = 9.8182$
- 2) Adjust Annuity Factors for Frequency of Payments:  
 $9.7365 \times 1.0252 = 9.9818598$   
 $9.8182 \times 1.0252 = 10.06561864$
- 3) Calculate the annuity which corresponds to the final payment:  
Annuity =  $(\$1,000,000 - (\$100,000 \times 9.9818598)) / (10.06561864 - 9.9818598) = \$21,657.65$
- 4) To transform this annuity into a single payment, divide by the number of payments per year:  
Final Payment =  $\$21,657.65 / 4 = \$5,414.41$

The **Exact Method** is, perhaps, a more intuitive method of calculating the duration and final payment amount of the annuity. This method assumes the annuity grows at a rate equal to the 7520 rate, and calculates the real payments and growth that would occur each year. The resulting schedule returns the exact amount payable in the final period.



The program defaults to using the IRS Annuity Factor Method. If you select the Exact Method, the program will include a schedule illustrating the exhaustion of the trust. When looking at this schedule, remember that the interest is compounded annually. Using the above example, the growth in the first year would equal  $6.8\% \times \$1,000,000 + 6.8\% \times \$900,000 + 6.8\% \times \$800,000 + 6\% \times \$700,000$ . This, of course, assumes that the payments are made at the end of each year.

Annuities paid at the beginning of the period are treated in the same manner as annuities paid at the end of each period. First, the trust is reduced by the value of the first payment. The above analysis is then performed for the annuity, assuming payments occur at the end of each period. Finally, the first payment is added to the annuity value.

## **Rev. Rul. 77-454**

Rev. Rul. 77-454 is part of the Section 7520 Reg. and it is also known as the “exhaustion test. This report calculates a limit in the valuation of annuities. The program shows the steps used to calculate the value of the exhausted annuity by splitting the annuity into two parts:

- An annuity that lasts up to but does not include the period when the original annuity exhausts.
- A single payment equal to the final partial payment of the original annuity.

The two annuities are then added together. The total is the Value for Rev. Rul. 77-454 Test report.

There are gray areas once you get beyond the simple case of an annual payment at the end of the period. The program uses an approach long followed for the similar Rev. Rul 77-374 test that is applied for Charitable Remainder Annuity Trust life cases. See George H. Moor Est., 43 TCM 1982-299, for the proposition that annual payments are adjusted by a payout frequency factor.

See Rev. Rul. 77-374 for more information on this test.

See the Section 25.7520-3(b)(2)(v), Example 5 ruling for more information on the exhaustion test.

## Text of Rev. Rul. 77-374

Advice has been requested whether a charitable deduction is allowable under section 2055 of the Internal Revenue Code of 1954 with respect to a remainder interest in a trust that was amended, pursuant to the order of a local court, under the circumstances described below.

The decedent died testate on June 15, 1973. Under the terms of the will, executed on September 15, 1972, the decedent bequeathed the residue of the probate estate, valued at \$400,000, in trust. The trustee was directed to pay to W, a female aged 61 years, \$40,000 each year during W's lifetime. The trust was to have terminated upon the death of W, at which time the principal and any accumulated income would be paid to an organization considered charitable under sections 170(c), 2055(a), and 2522(a) of the Code.

On March 15, 1974, the executor of the decedent's estate filed the Federal estate tax return in which a charitable deduction was claimed in respect of the trust. Six months thereafter, the Internal Revenue Service disallowed the charitable deduction because, in view of W's age and the size of W's annuity, a distinct possibility existed that no trust assets would remain available to charity at W's death. The possibility that W's annuity might entirely consume the trust assets was not so remote as to be a negligible possibility.

Section 2055(e)(3) of the Code was enacted on October 26, 1974, to provide for amendment of certain governing instruments in order to qualify charitable remainder interests passing thereunder for a charitable deduction for Federal estate tax purposes. Shortly thereafter, on December 5, 1974, the executor of the estate, the trustee of the trust, and W obtained from the local probate court an order amending and reforming the trust to provide that W shall receive a reduced annuity of only \$28,000 each year during W's lifetime. After the trust was amended, W repaid to the trustee the excess of the amount of the annuity that W had received during the prior year over the amount receivable under the amended trust.

Section 2055(a) of the Code provides that for purposes of the estate tax, the value of the taxable estate shall be determined by deducting from the value of the gross estate the amount of all bequests, devises, or transfers to or for the use of charity. Any property interest which increases a charitable bequest as the result of an irrevocable disclaimer of a non-charitable bequest, legacy, devise, transfer, or power will qualify for the charitable deduction "if the disclaimer is made before the date prescribed for the filing of the estate tax return."

Section 2055(e) of the Code provides, with certain exceptions, that where interests in the same property pass from the decedent to charity and to persons or for uses not qualified as charitable, the charitable deduction is disallowed unless, in the case of a charitable remainder interest, that interest is in a charitable remainder annuity trust or charitable remainder unitrust (described in section 664), or in a pooled income fund (described in section 642(c)(5)). The above requirement with respect to charitable remainder interests is set forth in section 2055(e)(2)(A). If however, a deduction is not allowable because of the requirements of section 2055(e)(2)(A), a deduction may nevertheless be allowable in certain cases pursuant to section 2055(e)(3).

Section 2055(e)(3) of the Code provides, in pertinent part, as follows:

In the case of a will executed before December 31, 1977, or a trust created before such date, if a deduction is not allowable at the time of the decedent's death because of the failure to meet the requirements of subparagraph (A) of paragraph (2) of this subsection, and if the governing instrument

is amended or conformed on or before December 31, 1977, or, if later, on or before the 30th day after the date on which judicial proceedings begun on or before December 31, 1977 become final, so that the interest is in a trust which is a charitable remainder annuity trust a deduction shall nevertheless be allowed.

Section 20.2055-2(a) of the Estate Tax Regulations provides that if a trust is created or property is transferred for both a charitable and a private purpose, deduction may be taken of the value of the charitable beneficial interest only insofar as that interest is presently ascertainable, and hence severable from the non-charitable interest. Section 20.2055-2(b) of the regulations provides that in the case of a charitable transfer subject to a condition, no deduction is allowable “unless the possibility that the charitable transfer will not become effective is so remote as to be negligible.

Section 24.1(c) of the Temporary Estate Tax Regulations describes those situations where a charitable deduction may be obtained by amending a governing instrument pursuant to section 2055(c)(3) of the Code. Section 24.1(c) states, however, that “a governing instrument may not be amended pursuant to this section unless, at the time of the decedent’s death, the interest is an irrevocable remainder interest for which a deduction,” but for section 2055(c)(2)(A), would be allowable under section 2055(a) and the regulations thereunder.

Under section 2031 of the Code and section 20.2031-10 of the regulations, an interest rate of six percent per annum is used for valuation purposes with respect to decedents dying after December 31, 1970. See also section 1.664-4(a)(1)(ii) of the Income Tax Regulations. A fund of \$400,000, invested at 6 percent per annum, yields \$24,000 each year. Therefore, the trustee of the charitable remainder annuity trust would have been required to invade trust principal each year in order to provide W with the \$40,000 annual payment originally provided in the decedent’s will. The principal of the trust must also be invaded, but to a lesser extent, to provide W with the reduced annuity of \$28,000 that she is now entitled to receive under the amended trust.

The mathematical formula used to determine the number of years it will take to completely exhaust a fund with an initial value of \$400,000, invested at 6 percent per annum, that is subject to fixed annual payments of \$40,000 out of both income and principal is:  $1.06 * \$400,000$  (initial value of corpus) -  $\$40,000$  (fixed annual payment) =  $\$384,000$  (value of corpus at end of year after first invasion). By a series of similar successive computations (that is:  $1.06 * \$384,000$  (value of corpus at end of first year) -  $\$40,000$  (fixed annual payment) =  $\$367,040$  (value of corpus after second invasion), it was determined that the original fund of \$400,000 would be completely exhausted in less than 16 years. Based on Table LN, which is found in section 20.2031-10(e) of the regulations, the probability that a female aged 61 will be alive 16 years hence—or stated otherwise, the probability that a female aged 61 will survive to age 77, is greater than 63 percent. See example 12 contained in IRS Publication 723A (12-70), “Actuarial Values II: Factors at 6 Percent Involving One and Two Lives.”

As set forth in Rev. Rul. 70-452, 1970-2 C.B. 199, the charitable deduction is not allowable where the probability exceeds 5 percent that a non-charitable beneficiary will survive the exhaustion of a fund in which charity has a remainder interest. Any possibility in excess of 5 percent that the contingency will occur and defeat charity's interest is not considered so remote as to be negligible within the meaning of section 20.2055-2(b) of the regulations. In this connection, see sections 2037 and 2042 of the Code which specify that 5 percent is the value at which a reversionary interest will be considered significant. The charitable deduction was disallowed in *Moffett v. Commissioner*, 269 F.2d 738 (4th Cir. 1959), where the probability that the fund would be exhausted was 19 percent, and *United States v. Dean*, 224 F.2d 26 (1st Cir. 1955), where the probability was 9 percent.

Section 2055(e)(3) of the Code states only that a trust instrument can be amended if no deduction is allowed because the instrument fails to meet the requirements of section 2055(e)(2)(A), which states that a charitable remainder trust must be in the form of an annuity trust, a unitrust or a pooled income fund. In neither an annuity trust, a unitrust nor a pooled income fund must the non-charitable beneficiary receive an amount less than the amount that would deplete the trust prior to the death of the non-charitable beneficiary. Sections 1.664-2, 1.664-3, and 1.642(c)-5 of the Income Tax Regulations. Thus, an amendment of a trust to meet the requirement of section 20.2055-2(b)(1) of the Estate Tax Regulations requirement that only a negligible chance exist that the charity will receive nothing is not a change within the purview of section 2055(e)(3) since the purpose of such a change is not compliance with the section 2055(e)(2)(A) requirements.

Additionally, the Senate Finance Committee Report states that the purpose of section 2055(e)(3) of the Code was merely to extend the cut-off date of the Treasury Regulation transitional rules that allow trusts to be amended to comply with the new requirements added by the Tax Reform Act of 1969. S. Rep. No. 93-1063, 93d Cong., 2d Sess. 3 (1974). The Conference Committee report contains a similar statement. H.R. Rep. No. 73-1405, 93 Cong., 2d Sess. 3 (1974). Therefore, to interpret section 2055(e)(3) as affording trusts an opportunity to achieve compliance with the long-standing requirement of section 20.2055-2(b)(1) of the regulations would be inconsistent with its legislative history.

Accordingly, no deduction is allowable under section 2055 of the Code for the amended charitable remainder annuity trust in this case.

### END OF RULING

## 5% Probability Test

Revenue Ruling 77-374 imposes a 5% probability test on charitable remainder annuity trusts that are measured by life expectancies. This is a second test that is quite different from the actuarial test which requires an annual percentage payout of not less than 5% of the initial fair market value of the trust. Under the rationale of Rev. Rul. 77-374, the charitable deduction is not allowable where the probability exceeds 5% that a non-charitable beneficiary will survive the exhaustion of a trust fund in which the charity has a remainder interest. Thus, the ruling may result in the disallowance of a charitable deduction even if a deduction amount has already been actuarially determined. Therefore, the program automatically applies the Revenue Ruling when applicable to one life and two-life charitable remainder annuity trust calculations.

## Calculations

The program applies the 5% probability test in the same manner in which it is applied in Rev. Rul. 77-374 and in a tax court case, *George H. Moor Est.*, 43 TCM 1982-299. The formula gleaned from these may be summarized as follows:  $((1 + \text{interest rate}) \times \text{initial corpus}) - \text{adjusted payment} = \text{year-end corpus}$ . Successive computations lead to the number of years in which the corpus is exhausted. It is clear from the Moor case that the payment is adjusted by a payment period factor before the formula is applied. It is interesting to note that both the revenue ruling and the Moor case include the year in which the corpus is exhausted. For example, Rev. Rul. 77-374 used 16 years (not 15) even though the corpus would be exhausted in less than 16 years. This worked to the taxpayer's advantage since 15 years would have resulted in a higher probability. The program determines the number of years to the expiry of the trust in the same manner. If the number of years exceeds 109, the program will indicate the period to be 109+ years.

After the number of years to expiry is determined, it is then added to the age of the person whose life determines the term of the trust to determine the age at the expiry of the trust. The program uses the age input you have entered which is the age as of the nearest birthday. Table LN values are then determined for the age input and the age at the expiry of the trust. When the Table LN value for the age at the expiry is divided by the Table LN value for the age input, the probability of surviving to the expiry of the trust is determined for a one-life charitable remainder annuity trust. For a two-life charitable remainder annuity trust, each probability is first subtracted from 1.0 and then multiplied times each other. The product is then subtracted from 1.0 to determine the probability of at least one survivor at expiry. If this probability exceeds 5%, the charitable deduction may be disallowed.

The 5% probability test of Rev. Rul. 77-374 is automatically applied when the dollar payout is high enough for the ruling to apply. This occurs when the annual percentage payout times the adjustment factor (Table K for transfers after April, 1989) exceeds the Table Rate. In such cases, the program will indicate the number of years to expiry of the trust and the probability of surviving to expiry (or for two lives, the probability of at least one survivor at expiry). The program will indicate whether or not the charitable deduction is allowable under the ruling.

## Charitable Deduction Disallowable

You may wonder why the program only indicates the charitable deduction MAY BE DISALLOWED instead of stating that it will be disallowed. This is because one may be able to use the argument that prevailed for the taxpayer in the Moor case. In that case, the court determined that a yield of 6.2% on trust assets could reasonably be anticipated. Based on that assumption, the probability percentages were less than 5%. Based on a 6% yield, the probability percentages had exceeded 5%. Thus, even if you fail the Rev. Rul 77-374 probability test, you may be able to use the Moor rationale to argue that an actual yield of greater than 10% on trust assets may qualify the trust. (The 6% tables were in effect for Moor.)

## Alternative Method

Subscribers to *Deferred Giving* by Conrad Teitell will note that he applies the 5% probability test somewhat differently. He uses an algebraic method where the initial corpus is divided by the annual payout with that result divided by the payment period factor. This method appears to be functionally equivalent to the formula from Rev. Rul. 77-374. However, Teitell then goes to a factor in Table B that is lower than his computed factor and takes the corresponding number of years as the number of years to expiry of the trust. This is a conservative approach that results in one less year than the IRS allowed in Rev. Rul. 77-374 and the Moor case. The program uses the IRS method. Teitell also uses the age at the last birthday preceding the date of the trust agreement. The program uses the age as of the nearest birthday that is the value you have entered for the age input. Finally, Teitell does note that, in marginal cases, additional calculations resulting in modifications to the number of years and ages may produce a smaller probability.

## Rev. Rul. 2001-21; 2001-18 IRB 1144 (30 Apr 2001)

The 2001 interest rates to be used in computing the special use value of farm real property for which an election is made under section 2032A of the Code are listed for estates of decedents.

This revenue ruling contains a list of the average annual effective interest rates on new loans under the Farm Credit Bank system. This revenue ruling also contains a list of the states within each Farm Credit Bank District.

Under section 2032A(e)(7)(A)(ii) of the Internal Revenue Code, rates on new Farm Credit Bank loans are used in computing the special use value of real property used as a farm for which an election is made under section 2032A. The rates in this revenue ruling may be used by estates that value farmland under section 2032A as of a date in 2001.

Average annual effective interest rates, calculated in accordance with section 2032A(e)(7)(A) and section 20.2032A-4(e) of the Estate Tax Regulations, to be used under section 2032A(e)(7)(A)(ii), are set forth in the accompanying Table of Interest Rates (Table 1). The states within each Farm Credit Bank District are set forth in the accompanying Table of Farm Credit Bank Districts (Table 2).

Rev. Rul. 81-170, 1981-1 C.B. 454, contains an illustrative computation of an average annual effective interest rate. The rates applicable for valuation in 2000 are in Rev. Rul. 2000-26, 2000-22 I.R.B. 1124. For rate information for years prior to 2000, see Rev. Rul. 99-20, 1999-1 C.B. 972, and other revenue rulings that are referenced therein.

### DRAFTING INFORMATION

The principal author of this revenue ruling is Lane Damazo of the Office of the Associate Chief Counsel (Passthroughs and Special Industries). For further information regarding this revenue ruling, contact Lane Damazo at (202) 622-3090 (not a toll-free call).

REV. RUL. 2001-21 TABLE 1  
TABLE OF INTEREST RATES  
(Year of Valuation 2001)

Farm Credit Bank District in Which Property Is Located	Interest Rate
Columbia	9.90
Omaha/Spokane	7.99
Sacramento	7.99
St. Paul	8.13
Springfield	8.97
Texas	8.22
Wichita	8.22

REV. RUL. 2001-21 TABLE 2  
TABLE OF FARM CREDIT BANK DISTRICTS

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District	States
Columbia	Delaware, District of Columbia, Florida, Georgia, Maryland, North Carolina, Pennsylvania, South Carolina, Virginia, West Virginia
Omaha/Spokane	Alaska, Idaho, Iowa, Montana, Nebraska, Oregon, South Dakota, Washington, Wyoming.
Sacramento	Arizona, California, Hawaii, Nevada, Utah.
St. Paul	Arkansas, Illinois, Indiana, Kentucky, Michigan, Minnesota, Missouri, North Dakota, Ohio, Tennessee, Wisconsin.
Springfield	Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Rhode Island, Vermont.
Texas	Alabama, Louisiana, Mississippi, Texas
Wichita	Colorado, Kansas, New Mexico, Oklahoma

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