hp calculators

HP 48GII Sinking Fund

The FINANCE menu

Sinking Funds

Practice solving for payment required to achieve a goal

The FINANCE menu

The Finance solver is accessed from the BLUE shifted function of the [9] key by pressing [←] FINANCE . When pressed, a data entry form is displayed that is used to solve a number of financial math problems.

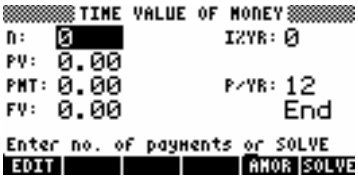

Figure 1

To solve problems using this display, move the cursor using the ◄ ▼ ▲ ► keys to each field and input its value, if known. To solve for the unknown value, move the cursor to the field for which you wish to solve, and press the [F6] key to register the choice of SOLVE, which is displayed above it. The value of the unknown will be calculated and displayed in the field. The solved value of the variable will be copied to the first level of the command stack in case further calculations with it are desired.

Variables will also be created whenever a value is stored in one of the financial fields or when it has been solved. These variables (N for example holds the value for n) can be seen in the [VAR] menu. When they are no longer needed, they can be deleted just like any other user-created variables. Values from a previous use of the financial solver remain until the variables holding them are deleted.

Several values are already present on this screen. The number of payments per year is set to 12 for monthly compounding, as shown to the right of the P/YR: in the screen above. If annual compounding is desired, this value should be changed to 1. If quarterly compounding is desired, this value should be changed to 4. Just below the P/YR: field, the calculator displays the word END, signifying that payments are assumed to occur at the end of each period, which would be the case for ordinary annuities. If payments are desired at the beginning of the period, as would be the case in an annuity due, this value can be changed by moving the cursor to this field. When the cursor is on this field, CHOOSE is displayed above the [F2] key, indicating the calculator will supply a list of choices (Begin or End) in a small CHOOSE box if this key is pressed. Note that Begin will be displayed as Beg if chosen. To exit from this data entry screen, press the [ON] key.

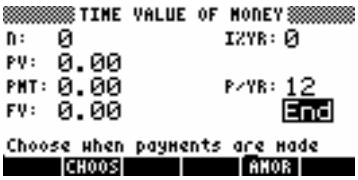

Figure 2

The HP 48GII Financial solver follows the standard convention that money in is considered positive and money out is negative.

Sinking Funds

A sinking fund is an annuity where a specific value in the future is needed, which is accumulated through a series of regular payments. These types of problems often occur when saving for a goal, such as retirement or college tuition.

Practice solving for payment required to achieve a goal

Example 1: How much would you need to save at the end of every month to accumulate $10,000 in 6 years? Assume the funds would earn 6%, compounded monthly, and that you begin with nothing in the account.

Solution: [←] FINANCE [7] [2] [ENTER] [6] [ENTER] [0] [ENTER] [1] [0] [0] [0] [0] [+/-] [ENTER] ◄ ▲ SOLVE

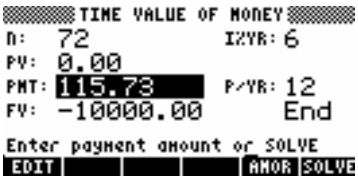

Figure 3

Answer: $115.73

Example 2: John wants to retire as a millionaire. He is 25 years old. How much would he need to deposit each month beginning one month from now and continuing until his 65th birthday in order to achieve his goal? Assume the funds would earn 5%, compounded monthly, and that John begins with nothing in the account.

Solution: Since John is 25, he has (65 – 25) x 12, or 480 months until his 65th birthday.
[↰] FINANCE 4 8 0 ENTER 5 ENTER 0 ENTER 1 0 0 0 0 0 0 +/- ENTER
◀ ▲ SOLVE

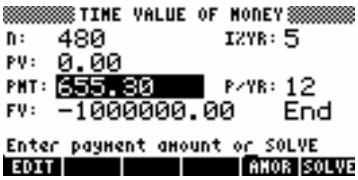

Figure 4

Answer: $655.30

Example 3: How much money should you deposit each year into an account, beginning one year from today, to have $30,000 in the account after 15 years? Assume the funds would earn 6%, compounded annually, and that the account begins with a balance of $1,000.

Solution: [↰] FINANCE 1 5 ENTER 6 ENTER 1 0 0 0 ENTER 0 ENTER 1 ENTER 3 0 0 0 0
+/- ENTER ◀ ▲ SOLVE

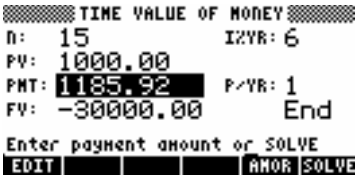

Figure 5

Answer: $1,185.92

Example 4: How much money should you deposit each month into an account, beginning one month from today, to have $30,000 in the account after 15 years? Assume the funds would earn 6%, compounded monthly, and that the account begins with a balance of $100.

Solution: [↰] FINANCE 1 8 0 ENTER 6 ENTER 1 0 0 ENTER 0 ENTER 1 2 ENTER
3 0 0 0 0 +/- ENTER ◀ ▲ SOLVE

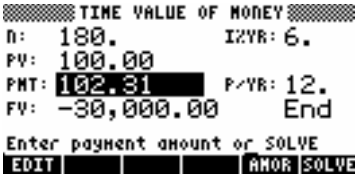

Figure 6

Answer: $102.31