hp calculators

HP 48GII Loan Down payments

The FINANCE menu

Down payments

Practice solving loan down payment problems

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.

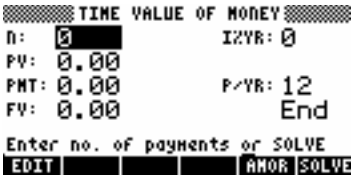

Figure 1

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, CHOOS 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.

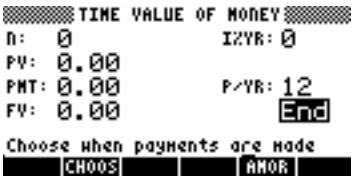

Figure 2

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

Loan Down Payments

Down payments are often made on loans to lower the required payment. Other reasons for down payments can be to ensure the loan applicant has an equity interest in the loan collateral, which would make the loan applicant less likely to abandon the property, since the property would be worth more than the loan balance. Down payments are also required to ensure an investment in the property has been made by the loan applicant, thereby reducing the risk to the lender that the loan will be abandoned.

The process to be used is to input the payment the applicant can afford and determine the equivalent Present Value (PV). The difference between this PV and the actual loan amount will indicate the down payment necessary to achieve the required payment.

Practice solving loan down payment problems

Example 1: Tommy wants to buy a car and can afford a payment of $400 a month. If the car costs $25,000 and Tommy can get a 72 month loan at 6.9%, compounded monthly, how much must Tommy give as a down payment to lower his payment to $400 a month?

Solution: [↰] [FINANCE] [7] [2] [ENTER] [6] [.] [9] [ENTER] [0] [ENTER] [4] [0] [0] [+/-] [ENTER] [1] [2] [ENTER] [0] [ENTER] [◀] [▲] [▲] [SOLVE]

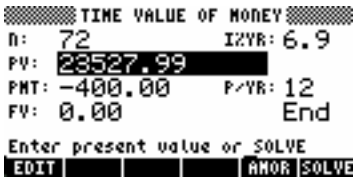

Figure 3

Then press [ON] [—] [2] [5] [0] [0] [0] [ENTER]

Figure 4

Answer: To lower his monthly payment to $400, Tommy needs to make a $1,472.01 down payment. (Note: If the 48GII is in RPN mode, the second series of keys would be: [ON] [2] [5] [0] [0] [0] [—])

Example 2: Jane is looking to buy a house and can afford a payment of $1,200 a month. If the house costs $270,000 and Jane can get a 30 year loan at 5.4%, compounded monthly, how much must Jane give as a down payment to lower her payment to $1,400 a month?

Solution: [↰] [FINANCE] [3] [6] [0] [ENTER] [5] [.] [4] [ENTER] [0] [ENTER] [1] [4] [0] [0] [+/-] [ENTER] [1] [2] [ENTER] [0] [ENTER] [◀] [▲] [▲] [SOLVE]

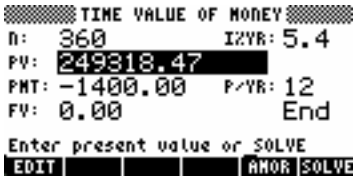

Figure 5

Then press [ON] [—] [2] [7] [0] [0] [0] [0] [ENTER]

Figure 6

Answer: To lower her monthly payment to $1,400, Jane needs to make a $20,681.53 down payment. (Note: If the 48GII is in RPN mode, the second series of keys would be: [ON] [2] [7] [0] [0] [0] [0] [—])