



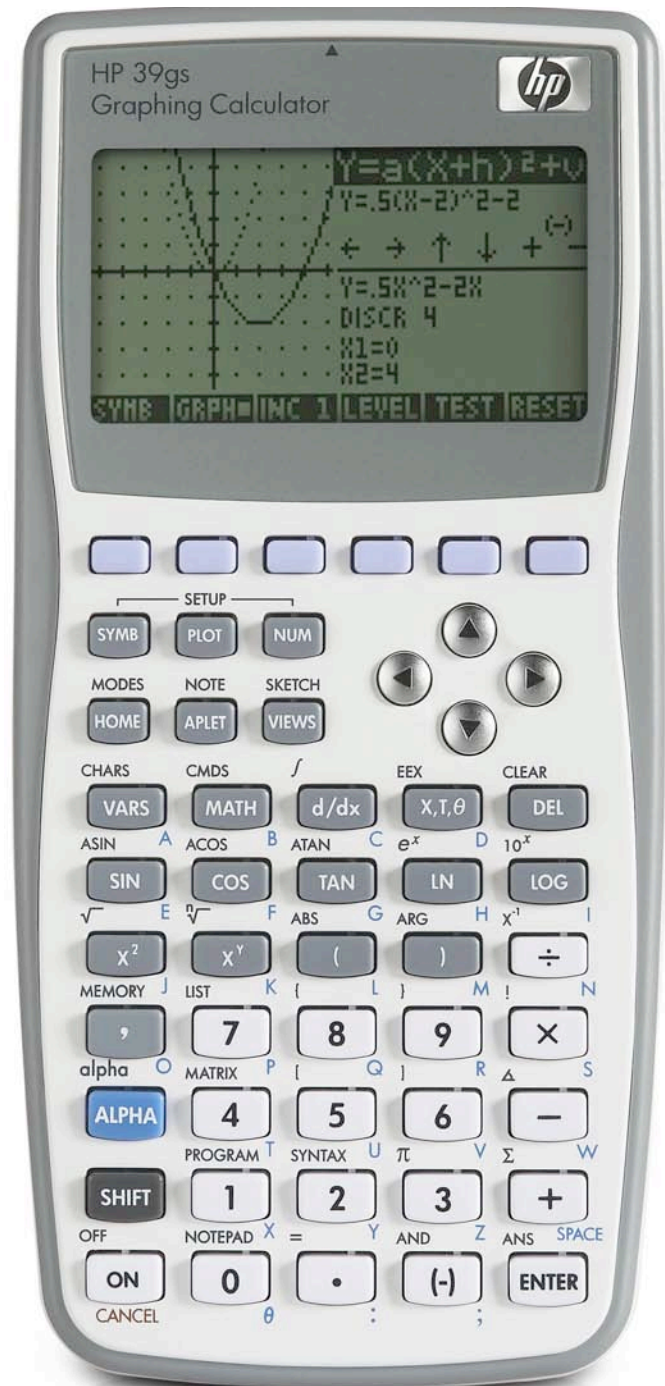
## hp calculators

HP 39gs House Payment Calculations

The FINANCE aplet

House payments

Practice solving house payment calculation problems



## The FINANCE aplet

The HP 39gs has a financial solver aplet built into the calculator. To access this aplet, press **APLET**. Scroll down the list using the **▼** key until "Finance" is highlighted in the display as shown below.



Figure 1

Press **ENTER** to begin the aplet. A data entry form is then displayed that is used to solve a number of financial math problems.

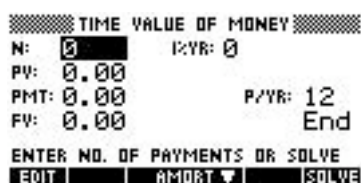


Figure 2

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 menu key labeled **▢**. The value of the unknown will be calculated and displayed in the field. Note: If you enter the aplet and values are already present in some of the fields, you can clear these values to their default state by pressing the **SHIFT** key and then **DEL**, to access the **CLEAR** function written above it.

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, **▢** is displayed above the second menu 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 a key that starts another function.



Figure 3

The HP 39gs financial solver follows the standard convention that money in is considered positive and money out is negative.

## House payments

The payment required to pay off a house over time involves the solution of an ordinary annuity with the value of the payment as the unknown variable.

## Practice solving for house payments

**Example 1:** Jill bought a house for \$210,000. Her 30-year loan will have an interest rate of 6%, compounded monthly. What is the size of her monthly house payment?

## hp calculators

### HP 39gs House Payment Calculations

Solution: **APLET** (press  $\nabla$  until the "Finance" aplet is highlighted) **ENTER**  
**3** **6** **0** **ENTER** **6** **ENTER** **2** **1** **0** **0** **0** **0** **ENTER** **1** **2** **ENTER** **0** **ENTER** **2** **ENTER**

```
TIME VALUE OF MONEY
N: 360    I/YR: 6
PV: 210,000.00
PMT: -1,259.06    P/YR: 12
FV: 0.00    End
ENTER PAYMENT AMOUNT OR SOLVE
EDIT AMORT SOLVE
```

Figure 4

Answer: \$1,259.06

Example 2: Samantha bought a house for \$165,000. Her 15-year loan will have an interest rate of 5%, compounded monthly. What is the size of her monthly house payment?

Solution: **APLET** (press  $\nabla$  until the "Finance" aplet is highlighted) **ENTER**  
**1** **8** **0** **ENTER** **5** **ENTER** **1** **6** **5** **0** **0** **0** **ENTER** **1** **2** **ENTER** **0** **ENTER** **2** **ENTER**

```
TIME VALUE OF MONEY
N: 180    I/YR: 5
PV: 165,000.00
PMT: -1,304.81    P/YR: 12
FV: 0.00    End
ENTER PAYMENT AMOUNT OR SOLVE
EDIT AMORT SOLVE
```

Figure 5

Answer: \$1,304.81

Example 3: Jeff bought a house for \$125,000 and financed it with a 20-year loan at a rate of 5.25%, compounded monthly. What is the size of Jeff's monthly house payment?

Solution: **APLET** (press  $\nabla$  until the "Finance" aplet is highlighted) **ENTER**  
**2** **4** **0** **ENTER** **5** **.** **2** **5** **ENTER** **1** **2** **5** **0** **0** **0** **ENTER** **1** **2** **ENTER** **0** **ENTER** **2** **ENTER**

```
TIME VALUE OF MONEY
N: 240    I/YR: 5.25
PV: 125,000.00
PMT: -842.31    P/YR: 12
FV: 0.00    End
ENTER PAYMENT AMOUNT OR SOLVE
EDIT AMORT SOLVE
```

Figure 6

Answer: \$842.31