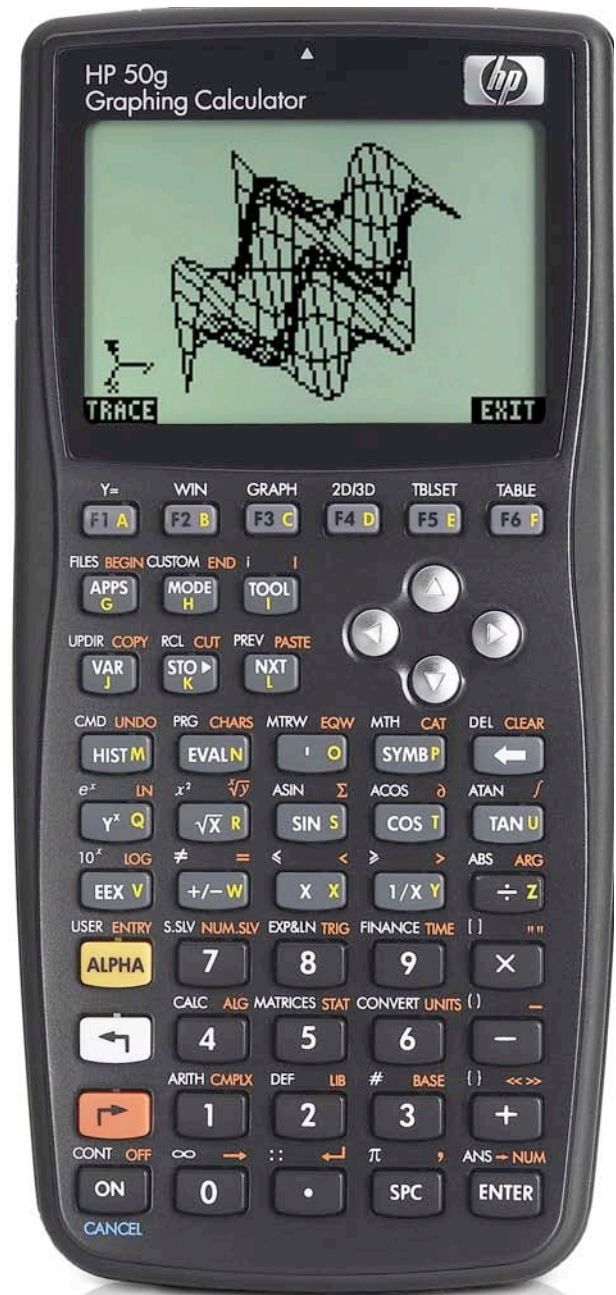# hp calculators

HP 50g Lease Payments

The FINANCE menu

Lease payments

Practice solving for the payment on a lease

The FINANCE menu

The Finance solver is accessed from the WHITE shifted function of the $\boxed{9}$ key by pressing $\boxed{\leftarrow}$ _FINANCE_ . When pressed, a data entry form is displayed that is used to solve a number of financial math problems.
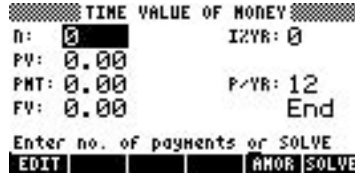
```
▓▓▓▓▓TIME VALUE OF MONEY▓▓▓▓▓
n:  0              I%YR: 0
PV: 0.00
PMT: 0.00          P/YR: 12
FV: 0.00                End
Enter no. of payments or SOLVE
EDIT        |     | AMOR SOLVE
```
Figure 1

To solve problems using this display, move the cursor using the $\boxed{\triangleleft}$ $\boxed{\triangledown}$ $\boxed{\triangle}$ $\boxed{\triangleright}$ 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 $\boxed{F6}$ key to register the choice of ▓▓▓▓▓, 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 $\boxed{VAR}$ 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, ▓▓▓▓▓ is displayed above the $\boxed{F2}$ 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 $\boxed{ON}$ key.

```
▓▓▓▓▓TIME VALUE OF MONEY▓▓▓▓▓
n:  0              I%YR: 0
PV: 0.00
PMT: 0.00          P/YR: 12
FV: 0.00              End
Choose when payments are made
   CHOOS|     | AMOR |
```
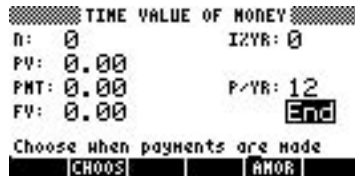Figure 2

The HP 50g Financial solver follows the standard convention that money in is considered positive and money out is considered negative.

Lease payments

A lease is an agreement for one company or individual to use an asset owned by another company or individual for a specified time. The payment required (often called the "rent") during this lease period depends upon the interest rate involved and the decline in value the asset with experience while being used. The projected value of the asset at the end of the period is often called the residual value. Lease payments are usually made in advance, which requires them to be treated as annuities due. Note that it may also be difficult to determine the actual interest rate involved in a lease. The examples below assume this interest rate is known.

Practice solving for the payment on a lease

Example 1:   A company is considering leasing a machine that costs $20,000 today. The lease would be for 5 years with a residual value of $6,000 for the machine at the end of that period. The agreement calls for the use of an 8%, compounded monthly, interest rate. If monthly lease payments will be made, what is the size of the lease payment required?

Solution: To solve this leasing problem, the calculator will need to be in BEGIN mode. The solution below assumes the calculator is not already in this mode. If the calculator is already in this mode, the keystrokes of ⬛CHOOS ▲ ⬛OK⬛ shown below may be omitted.

⟵ FINANCE 6 0 ENTER 8 ENTER 2 0 0 0 0 ENTER ▶ / 1 2 ENTER 6 0 0 0 +/- ENTER ⬛CHOOS ▲ ⬛OK◀ ▲ SOLVE

```
░░░░░░TIME VALUE OF MONEY░░░░░░
n:    60            I%YR: 8
PV:   20000.00
PMT: -321.72        P/YR: 12
FV:  -6000.00         Beg
Enter payment amount or SOLVE
 EDIT              AMOR SOLVE
```
Figure 3

Answer: $321.72

Example 2: An individual is considering leasing a car that costs $26,995 today. The lease would be for 2 years with a residual value of $14,000 for the vehicle at the end of that period. The agreement calls for the use of a 6%, compounded monthly, interest rate. If monthly lease payments will be made, what is the size of the lease payment required?

Solution: To solve this leasing problem, the calculator will need to be in BEGIN mode. The solution below assumes the calculator is not already in this mode. If the calculator is already in this mode, the keystrokes of ⬛CHOOS ▲ ⬛OK⬛ shown below may be omitted.

⟵ FINANCE 2 4 ENTER 6 ENTER 2 6 9 9 5 ENTER ▶ / 1 2 ENTER 1 4 0 0 0 +/- ENTER ⬛CHOOS ▲ ⬛OK◀ ▲ SOLVE

```
░░░░░░TIME VALUE OF MONEY░░░░░░
n:    24            I%YR: 6
PV:   26995.00
PMT: -642.73        P/YR: 12
FV:  -14000.00        Beg
Enter payment amount or SOLVE
 EDIT              AMOR SOLVE
```
Figure 4

Answer: $642.73

Example 3: A company is considering leasing a machine that costs $24,505 today. The lease would be for 3 years with a residual value of $11,000 for the machine at the end of that period. The agreement calls for the use of an 10%, compounded monthly, interest rate. If monthly lease payments will be made, what is the size of the lease payment required?

Solution: To solve this leasing problem, the calculator will need to be in BEGIN mode. The solution below assumes the calculator is not already in this mode. If the calculator is already in this mode, the keystrokes of ⬛CHOOS ▲ ⬛OK⬛ shown below may be omitted.

⟵ FINANCE 3 6 ENTER 1 0 ENTER 2 4 5 0 5 ENTER ▶ / 1 2 ENTER 1 1 0 0 0 +/- ENTER ⬛CHOOS ▲ ⬛OK◀ ▲ SOLVE

```
░░░░░░TIME VALUE OF MONEY░░░░░░
n:    36            I%YR: 10
PV:   24505.00
PMT: -528.08        P/YR: 12
FV:  -11000.00        Beg
Enter payment amount or SOLVE
 EDIT              AMOR SOLVE
```
Figure 5

Answer: $532.08