hp calculators
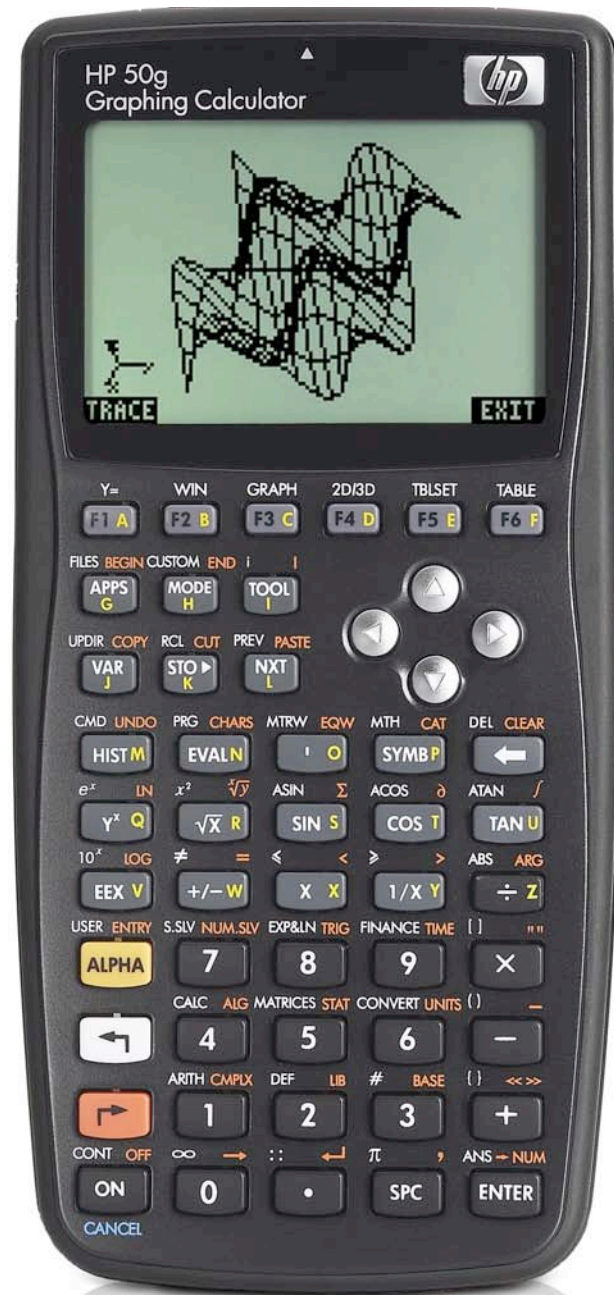
HP 50g Return on Investment

The FINANCE menu

Return on Investment

Practice solving return on investment problems

The FINANCE menu

The Finance solver is accessed from the WHITE 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.

```
▓▓▓▓▓ 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
```
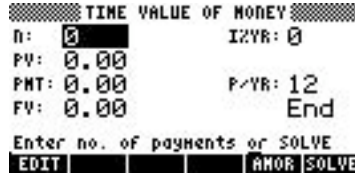Figure 1

To solve problems using this display, move the cursor using the ◁ ▽ △ ▷ 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.

```
▓▓▓▓▓ 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
```
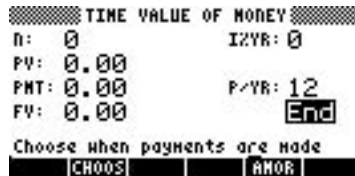Figure 2

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

Return on Investment

Return on investment, or ROI, involves determining the interest rate that makes the value of future cash flows equal to the initial investment. This interest rate indicates the return received on the initial deposit or investment. In other situations, this same calculation would result in a value called the Internal Rate of Return or IRR.

Practice solving return on investment problems

Example 1: An asset is purchased for $10,000 which will generate cash flows of $2,000 a year for 5 years. The asset will be sold for $3,500 after these 5 years are over. What is the return on investment for this purchase?

Solution: ⌐←⌐ *FINANCE* ⌐5⌐ ⌐ENTER⌐ ▷ ⌐1⌐ ⌐0⌐ ⌐0⌐ ⌐0⌐ ⌐0⌐ ⌐+/-⌐ ⌐ENTER⌐ ⌐2⌐ ⌐0⌐ ⌐0⌐ ⌐0⌐ ⌐ENTER⌐ ⌐1⌐ ⌐ENTER⌐
⌐3⌐ ⌐5⌐ ⌐0⌐ ⌐0⌐ ⌐ENTER⌐ ▷ ▷ ▓SOLVE▓

```
░░░░░TIME VALUE OF MONEY░░░░░
n:   5              I%YR:9.17
PV: −10000.00
PMT: 2000.00        P/YR: 1
FV: 3500.00              End
Enter yearly int rate or SOLVE
EDIT         |        AMOR SOLVE
```
Figure 3

Answer: The investment will generate a return of 9.177% per year.

Example 2: John is considering investing in a restaurant. The initial investment would be $50,000. Forecasted income to John would be $5,000 per year. If John were to follow through with this investment for the 7 year period and then sell his interest for $80,000, what would be his return on investment?

Solution: ⟵ FINANCE 7 ENTER ▶ 5 0 0 0 0 +/− ENTER 5 0 0 0 ENTER 1 ENTER 8 0 0 0 0 ENTER ▶ ▶ SOLVE

```
░░░░░TIME VALUE OF MONEY░░░░░
n:   7              I%YR:15.3
PV: −50000.00
PMT: 5000.00        P/YR: 1
FV: 80000.00             End
Enter yearly int rate or SOLVE
EDIT         |        AMOR SOLVE
```
Figure 4

Answer: The investment will generate a return of 15.36% per year.

Example 3: Mark is considering buying a copying machine to put in the lobby of the business building at a local college. He has already received permission to do this from the college. The cost of the machine will be $3,495. Mark estimates that each month, he will receive $90 after taxes. His plan is to keep this in place for 5 years, at which time, the machine could be sold for an estimated $200. What would be his return on investment?

Solution: ⟵ FINANCE 6 0 ENTER ▶ 3 4 9 5 +/− ENTER 9 0 ENTER 1 2 ENTER 2 0 0 ENTER ▶ ▶ SOLVE

```
░░░░░TIME VALUE OF MONEY░░░░░
n:  60              I%YR:19.6
PV: −3495.00
PMT: 90.00          P/YR: 12
FV: 200.00               End
Enter yearly int rate or SOLVE
EDIT         |        AMOR SOLVE
```
Figure 5

Answer: The investment will generate a return of 19.68% per year.