Note 1M: Finance Solver

The Finance Solver will solve problems about simple loans, mortgages, and investments. From the Calculator application, press (menu) and choose Finance | Finance Solver. Enter values into all but one of the areas of the Finance Solver dialog box. In general, negative money amounts indicate money you give to the bank and positive amounts indicate money you receive from the bank.

N = the total number of payments.

I(%) = the annual interest rate as a percent.

PV = the present value, which is negative for investments.

Pmt = the payment or regular deposit, which is negative for investments.

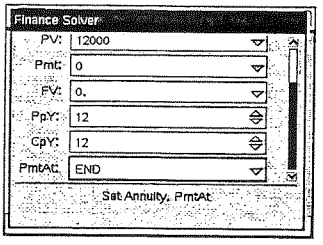
FV = the future value.

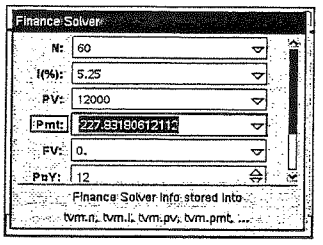
PpY = the payments per year.

CpY = the interest calculations period per year.

PmtAt = payments made at the end or beginning of each period. To toggle between END and BEGIN, press ▼ to highlight the appropriate selection and press (enter).

After entering values for all except the unknown quantity, move the cursor to the value you want to find and press (enter).





This screen shows the calculation of a monthly payment to completely repay a 5-year (60-month) $12,000 loan at 5.25% interest, with payments made at the end of each month. The answer, PMT, is negative because it is a payment made to a bank.

Exercises

Calculate the future value of each annuity.

1. $800 semiannually, 12 years, 4%
2. $400 monthly, 6 years, 5.5%
3. $200 monthly, 3 years, 7%
4. $1000 annually, 14 years, 6.25%
5. $450, quarterly, 8 years, 5.5%
6. $300 bimonthly, 18 years, 4.35%

Calculate the monthly payment and the total amount to be repaid for each loan.

7. $220,000, 30 years, 5.5%
8. $140,000, 20 years, 6.75%
9. $20,000, 5 years, 8.5%
10. $5000, 5 years, 4.25%
11. $45,000, 10 years, 3.5%.
12. $180,000, 30 years, 6.5%

13. **CHANGING VALUES** Changing a value of any of the variables may dramatically affect the loan payments. The monthly payment for a 30-year loan for $150,000 at 6% interest is $899.33, with a total payment amount of $323,757.28. Calculate the monthly payment and the total amount of the loan for each scenario.
    a. Putting down $20,000 on the purchase.
    b. Paying 4% interest instead of 6%.
    c. Paying the loan off in 20 years instead of 30.
    d. Making 13 payments per year.
    e. Which saved the most money? Which had the lowest monthly payment?