

- (1) Solve using the SOLVE command on your calculator.  $(1 + x)^{30} - 100x = 0$
- (2) Solve the following using logarithms.  $75 = \frac{1 - 1.005^{-n}}{0.01}$
- (3) You receive a gift from an anonymous source. The gift is a bank account worth \$15,000. The account was established 20 years ago and has earned an annual interest rate of 7.2%, compounded monthly during that time. What was the starting amount in the account?
- (4) You have decided to purchase 300 shares of stock priced at \$75.00 per share. There is a commission of \$40 plus 1% of the purchase price on both the purchase and sale of the stock. After 5 years, you sell the stock for \$90 per share. What was the simple annual rate of return on the investment?
- (5) What are the payments on a \$12,000 car loan if the annual interest rate is 8.1% compounded monthly and the loan has a life of three years?
- (6) You are planning on making a major purchase costing \$20,000 in three years. How much should be deposited each month into an account with an annual interest rate of 4.8%, compounded monthly, so that you meet your goal?
- (7) You are paying off a 30 year \$200,000 mortgage. The annual interest rate is 7.8%, compounded monthly. What is the balance of the loan after five years?
- (8) You are paying off a 30 year \$200,000 mortgage with monthly payments of \$4000. The annual interest rate is 7.8%, compounded monthly. How long, to the month, does it take to pay off the loan?
- (9) A credit card with a balance of \$5000 is to be paid off in 3 months. The annual interest rate on the card is 18.6%, compounded monthly. Assuming that you make no additional purchases with the card, write an amortization schedule for paying off the balance.
- (10) At the time they retire, a couple has \$200,000 in an account that pays 8.4%, compounded monthly.
- If they decide to withdraw equal monthly payments for 10 years, at the end of which time the account has a balance of zero, how much should they withdraw each month?
  - What is the total withdrawn?
  - What is the total interest withdrawn?
- (11) To complete the sale of a house, the seller accepts a 180 day note for \$12,000 at 12% simple interest. Wishing to have use of the money sooner, the seller sells the note to a third party for \$12,200 after 45 days. What annual rate of interest will the third party receive for the investment? (Use 360 days per year).
- (12) You are paying off a 30 year \$200,000 mortgage. The annual interest rate is 7.8%, compounded monthly. How much interest did you pay in the 10th year of the loan?