1. Solve using the SOLVE command on your calculator. 
   \[(1 + x)^{30} \cdot 100x = 0\]

2. Solve the following using logarithms. 
   \[75 = \frac{1.005^n}{0.01}\]

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. 
    (a) 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? 
    (b) What is the total withdrawn? 
    (c) What is the total interest withdrawn?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?