

1. How long will it take to pay off a credit card balance of \$6000 with a 16.8% interest rate if you make monthly payments of \$150?
2. A couple wants to have \$100,000 to pay for their newborn child's college education 18 years from now. How much do they need to invest in their 6.9% money market account each quarter in order to achieve their goal?
3. If you deposit \$100 twice a month in your bank account that earns 4.2% interest, how long will it take to accumulate a million dollars?
4. A couple borrows \$150,000 to buy a \$170,000 house. They take out a 30-year mortgage with a fixed-rate of 5.4%.
  - a. What will be their monthly payment on the mortgage?
  - b. If the couple lives in the house for the next 30 years, how much in total will they end up paying for the mortgage?
  - c. After 5 years, the couple decides to sell the house and move into a larger house. How much do they still owe on the mortgage?
  - d. How much equity does the couple have in the house after living there 5 years if the value of the house has depreciated by 4% each year?
5. A home owner finances a new luxury car using a "home equity" loan so that she can deduct the interest each year when calculating her taxable income. She borrows \$30,000 at 6.36% and will pay it back over the next 4 years.
  - a. How much will her monthly payments be?
  - b. After one year, how much will she still owe on the loan?
  - c. How much will she pay in interest (in dollars) during the first year of the loan?
6. The local Moose Lodge wants to set up a scholarship fund that awards one \$1000 scholarship each year for the next 20 years.
  - a. How much money do they need now to establish the fund if the fund earns 6.4% annually?
  - b. The Lodge is able to raise \$12,000 for the fund. As a result, they decide to award the scholarship each year as long as there is enough money in the fund. How many years will they be able to award the scholarship?
  - c. How much money will still be in the fund after the last \$1000 scholarship is awarded?
  - d. If the Lodge had wanted to award the scholarship indefinitely, how much money would they have needed to establish the fund?

## ANSWERS:

1. 5 years
2. \$711.03
3. 70 years
4.
  - a. \$842.30
  - b. \$303,226.63
  - c. \$138,505.96
  - d. \$107.40
5.
  - a. \$709.51
  - b. \$23,197.83
  - c. \$1,711.99
6.
  - a. \$11,106.57
  - b. 23 years
  - c. \$525.40
  - d. \$15625