

For each problem, show your work, including the formulas or arithmetic procedures which you used to get your answer. Financial calculations should be rounded to the nearest cent, and give at least one digit past the decimal point on all other calculations.

1. **(7 points)** You intend to buy a \$125,000 house with a 15% down payment and a 15-year mortgage with a 5.625% annual interest rate compounded monthly, with 1.5 discount points to be included in the loan. Answer the following three questions:
  - (a) What is the loan principal?
  
  
  
  
  
  
  
  
  
  
  - (b) What is the monthly payment amount?
  
  
  
  
  
  
  
  
  
  
  - (c) What is the total amount of interest paid over the lifetime of the loan (“finance charge”)?
  
  
  
  
  
  
  
  
  
  
2. **(4 points)** You have a small-business loan of \$10,000 which you are repaying in equal quarterly installments over five years. The loan has an annual interest rate of 7%, compounded quarterly. What is the balance on the loan three years into its lifetime?
  
  
  
  
  
  
  
  
  
  
3. **(4 points)** By putting away \$250 each month in a savings account, you hope to at some point afford a \$9,000 used car. You have found a savings account that pays 3.2% annual interest compounded monthly for this purpose. How long will it take you to save up enough money for the car?