

For each problem, show your work, including the formulas or arithmetic procedures which you used to get your answer.

1. **(7 points)** You have \$1500 in an account that pays an annual interest rate of 4.2%, compounded monthly.
  - (a) How many *months* will it take your account balance to grow from this initial balance to \$2000?
  
  
  
  
  
  
  
  
  
  
  - (b) How many *months* will it take your account balance to grow from the initial balance to \$3000?
  
  
  
  
  
  
  
  
  
  
2. **(6 points)** I am depositing \$800 at the end of each quarter into an initially empty retirement account which earns 2.4% annual interest compounded quarterly. What will the balance of the account be after 7 years and 3 months have passed? Of the total balance at this time, what quantity is the result of interest earned? Circle both answers, indicating which is which.
  
  
  
  
  
  
  
  
  
  
3. **(7 points)** I am taking out a 48-month car loan at an annual interest rate of 3.375% compounded monthly. I can afford a monthly payment of \$400 on this loan. How large a loan principal could I take out? What is the finance charge (i.e., total amount of interest paid over the life of the loan)? Label which answer is which.