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.