Mathematics of Personal Finance

The following two problems are to be used for discussion purposes to allow your instructor to develop concepts not specifically addressed in our text. Specifically we will look at the finances of buying a car in Maryland and some of the "pitfalls" of a home mortgage. Use these questions as additional class notes for the Finance Unit:

I have found my "dream" car. It is a new luxury model loaded with options that has a window price of $34,400. The salesman said he was in a good mood today and would deduct $2400 from this price if I bought the car today. I am trading in my old car that has a book value of $6500. The State sales tax is 5% and the license tag fee is $70. The manufacturer is offering a $500 rebate, which I will apply to the purchase price of the car. The State of Maryland also collects $2 for a fund to help dispose and cleanup old tire dumps. After making a cash down payment of $3,000, I will borrow the remainder of the amount necessary to purchase this car.

a) How much do I need to borrow to buy this car?

b) If the bank is charging 7.2% interest compounded monthly for the loan on a five-year loan, what is my monthly payment?

c) After owning the car for 3 years you decide to buy another car. The salesman at the dealership tells you that you can trade in your present car and the dealership would pay off the rest of your loan. However, the negative equity would carry over to the amount that is needed to finance the new car. How much is this negative equity?