Hw 2

Find the particular solution to the following dynamical systems.

1. , 
2. , 
3. , 
4. You have a credit card debt of $5,000. The annual interest rate for your credit card is 18%, compounded monthly. Each month, you make a payment to reduce your debt. In the first month, your payment is $200. Every month after that, you increase your payment by 1%. That is, your payment in the second month is $202.00; your payment in the third month is $204.02; and so forth.

Give a dynamic systems model, using one variable *a*(*n*), for your debt in month *n*.

Find the particular solution to this system.

1. Retirement problem: You have $1,000,000 for your retirement. You move your money from a stock fund over to a more conservative bond fund which earns 7% interest, compounded monthly. How much money can you withdraw each month so that your savings will last 20 years?
2. Solve problem 5 if interest is compounded quarterly.