review problems think-pair-share
Dr. Sarah's MAT 1010: Introduction to Mathematics

Part A: Answer all the questions and type your responses for the forum. Add a new discussion topic with the subject as your preferred name and the post as your responses and any questions you have.

Part B: Respond separately to at least two of your classmates postings in a meaningful way. Use their preferred name (like Dr. Sarah is mine), with something new that justifies your position on (at least) one of the questions. Don't just say, "Yeah, I agree." Instead, say, "Yes preferred name, but we also need to consider..." Or, "Preferred name, I don't agree because..." You might also pose questions, answer questions, extend ideas, or compare and contrast your responses and summarize what you chose and why.

1. Alex works part-time and earns $100 each week. Alex deposits the earnings at the end of each month in an account which pays 6.8% compounded monthly. If Alex does this consistently for three years, will they have enough to buy the $15,000 car they are hoping to get? (Assume 4 weeks in a month.)

2. If you have $800 to invest for two years, which is the better investment: 7.5% compounded annually or 7.3% compounded monthly? Why?

3. Maya is 38 years old and settled into a job making about $27,000 per year that they receive in equal payments at the end of each month. Maya decides it's time to begin putting 10% of each paycheck immediately into a retirement account which pays 6.7% compounded monthly. Alice, Maya's sister, is 22 years old. She decides to go ahead and start putting $75 at the end of each month into the same retirement account, even though she isn't making much money at her job yet. If both continue doing the same until they retire at age 65, who will have more retirement money? Who will have deposited more?

4. Taylor deposits $500 at the end of each quarter into an account paying 6.5% interest compounded quarterly for 7 years. Taylor then changes the deposit to $725 each quarter for 5 more years at the same rate. What will the total savings plus interest be after the entire 12 years?

5. You are buying a house and taking out a loan for $54,000. The lowest interest rate is 8.25% compounded monthly.

   a) Find the monthly payments if you get a thirty year loan.
   b) What are your monthly payments if you get a fifteen year loan?
   c) How much money will you save with the fifteen year loan?

6. Isaac decided to buy that beautiful 10 acres just off the Blue Ridge Parkway. Isaac can purchase the land for $42,000, and the owner has agreed to allow them to make payments each quarter for the next 5 years at 10% interest on the unpaid balance.

   a) What is the quarterly payment?
   b) What is the total interest paid over the life of the loan?
   c) What is the first quarter's interest?
   d) Prepare the first two rows of an amortization schedule for the loan. What is the balance at the end of the second quarter?