Extra Credit for Exam 2

Due Monday, November 23, 2:50 p.m. No late assignments will be accepted.

Directions: Show all work for full credit. Simplify answers completely. Clearly indicate all answers. You are allowed to use the textbook, your class notes, homework assignments, quizzes, and exams as references. **Work independently.** You may only ask the instructor for help on this assignment (Note: This means that you may not work with anyone else in the class, you may not get help from the tutoring center, etc.). Do the problems in order on a separate sheet of paper. Be sure to staple multiple page assignments and tear off rough edges before handing in this assignment.

This assignment is worth a maximum of 30 points, which will be counted towards your score from Exam 2. You must turn in your Exam 2 with this assignment.

1. Do the following calculations without a calculator, given that $\log_3 2 = 0.631$. (2 points each)

   a. $\log_3 16$

   b. $\log_3 \dfrac{1}{6}$

   c. $\log_9 2$

   d. $\log_2 3$

   e. $\log_3 \sqrt{36}$

2. Eric is buying a home that costs $375,000. He makes a 15% down payment, and borrows the rest as a 30-year mortgage with monthly payments, an interest rate of 6% and closing costs of $1000 plus 3 points. How much total in interest and fees will he pay over the life of the loan? (6 points)

3. When JoeBob was 30 years old, he started saving for his retirement by putting equal deposits each month into an account. At age 52, he stopped making deposits, but left the money in the account. At age 65, he had $750,000 in the account. How much had he been depositing every month? Assume a constant APR of 5%, compounded monthly. (5 points)

4. Solve the following equations for x: (3 points each)

   a. $\log_x 14 = 3$

   b. $\log_{27}(x-4) = \dfrac{1}{3}$

   c. $5 \cdot \left(\dfrac{1}{3}\right)^{4-x} = 405$