Topics covered in Exam 2 for Math 1050-90

Section 2.6: Rational Expressions
1. Be able to analyze a rational expression for holes, vertical, horizontal, and slant asymptotes, and x and y-intercepts. Use this information to graph the expression.

Chapter 3: Logarithmic and Exponential equations
2. Expand an expression to a sum or difference of logs or simplify an expression to a single log.

3. Solve logarithmic and exponential equations.

4. Given an equation $y = \log_b x$ be able to solve for b, x or y.

5. Given an equation $a^x = y$, be able to solve for a, x, or y.

6. Use logarithms and/or exponents to determine solutions to problems about doubling and half-life and investing money at a given interest rate.

7. Given a graph, be able to identify the exponential/log function shown, asymptotes, etc.

8. Graph exponential functions and logarithmic functions including asymptotes and important points. (You will also need to use prior knowledge about vertical and horizontal shifts and reflections in the x- and y-axes.)

9. Please be familiar with powers of 2 (2,4,8,16, … up to 1024) and powers of 3, 4 and 5 up to the 4th power.

Chapter 7: Systems of equations
10. Set up and solve two equations in two unknowns (linear and non-linear equations).

11. Set up and put a system of three equations with three unknowns into row echelon form, using legitimate row operations.

12. Recognize and justify when a set of equations has 0, 1 or many solutions.

13. Translate a word problem into a set of equations.

14. Solve a linear programming problem determining a maximum or minimum.

15. Solve a set of equations or inequalities graphically and algebraically.

16. Find the partial fraction decomposition of a rational expression.

Note: No calculator will be allowed on the exam, so your answers may look like log 3 or e^2 or $\dfrac{\ln 2}{5}$.

The following is printed on the front cover of your exam.

$y = Pe^{rt}$ and $y = P\left(1 + \dfrac{r}{n}\right)^{nt}$ Remember log(a) means log in base 10, and ln(a) means base e.

<u>Practice Problems</u>

- Practice Exam 2 and solutions
- Reading Exponential and Logarithmic Graphs Supplement (extra resource in Week 5)
- Be sure you know how to solve the Canvas quiz problems from Weeks 4-8
- Chapter Review problems from the text book:
    - Chapter 2 Test (page 194) #14-16
    - Chapter 3 Test (page 255) #5-11, 15-26, 28
    - Chapter 7 Test (page 533) #1-19