TIPS FOR PRACTICE MIDTERM II

1. Remember, the negative 1 in the exponent refers to the inverse. When looking at the inverse function notation, what is in the parenthesis is now the "y" value and the output is now the "x" value of the original function.

   "Invertible" functions imply that the inverse is one-to-one. There were several parameters used to determine one-to-one including the horizontal line test, functions that only increase or decrease, etc.

2. Use the log rules to simplify. [$\log(10^x) = x$ and $\ln(e^x) = x$]. Rewrite numbers as exponentials. Remember to use negative exponents to reciprocate the base, when needed…like in part C. Refer to the notes.

3. A) Swap the "x" and "y" then solve for "y". B) Substitute the equation for g(x) where ever there is an x in the inverse function, then simplify.

4. A) Try adding the $\log_4(x+4)$ to both sides, then use log rules to simplify. B) divide both sides by 3, then take the ln of both sides. C) make the bases the same then solve.

5. Apply the log rules, then simplify. You will end up with a fraction divided by a fraction. Remember, to simplify, take the fraction in the denominator, flip it, then multiply it by the fraction in the numerator.

6. Recall transformation rules. Differentiate between vertical shifts and horizontal shifts.

7. When graphing the inverses, label the coordinate points of the original graph, then swap the x and y for the inverse function. Plot those points and graph.

8. Recall the graphs of exponential vs. log functions. Domain refers to the span of x values. Range refers to the span of y values.

9. Use $y = Ca^x$ for both coordinate points. Take the ratio of both equations, you will find that "C" cancels, and you can solve for "a". Then plug "a" back into any one of the original equations, and solve for "C".

10. Recall compounding equation vs. continuous equation for interests. $A = A_0(1+r/n)^{nt}$ vs $A = Pe^{rt}$.

11. Refer to your notes for the decay equation.