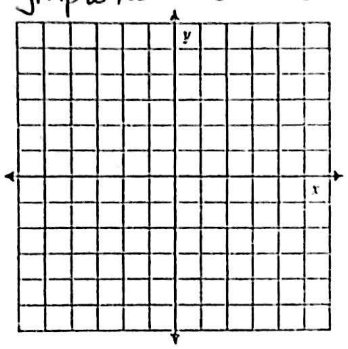
Review 5.1-5.3

Math 3 Review 5A Worksheet (* indicates non-calculator questions)

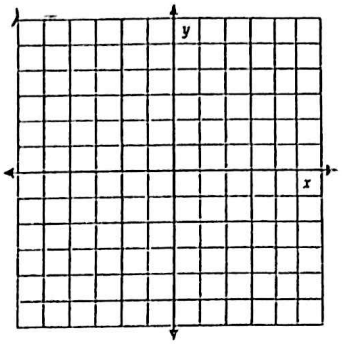
1. Simplify: a. $\sqrt{16e^{10x}}$ b. $\frac{15e^4}{3e^9}$ c. $(5e^{-4x})^3$

2. Tell whether the function represents exponential growth or exponential decay. Graph. (Include asymptotes. Give domain & range.)

a) $y = e^{x+1} - 2$



b) $y = \log_3(x-1) + 3$



3. You have $5000 to invest at 4.6% interest for 7 years.
   a. What is your balance if the money is compounded quarterly?
   b. What is your balance if the money is compounded continuously?

4. a. Rewrite as an exponential expression: $\log_b a = c$
   b. Rewrite as a logarithmic expression: $m^k = q$

*5. Evaluate without a calculator: a. $\log_6 1 =$ ____ b. $\log_3 \frac{1}{81} =$ ____ c. $\log_{16} 4 =$ ____

*6. Put in order from smallest to largest. $\log_3 16?, \log_4 5?, \log_2(8)?, \log_2 1?$

*7. Simplify: a. $e^{\ln 7x} =$ ____ b. $8^{\log_8 2x} =$ ____ c. $\log_4 16^{3x} =$ ____

*8. Find the inverse of the function: a. $y = 6^{x-3} + 2$ b. $y = \ln(x+2)$

9. Write and solve an equation to find what power of 10 has a value of 5.6