Math 3 Chapter 5 Review Questions

1. You have $5000 to invest at 4.6% compounded continuously for 7 years. What is the principal? What does r equal? What is the balance at the end of 7 years?

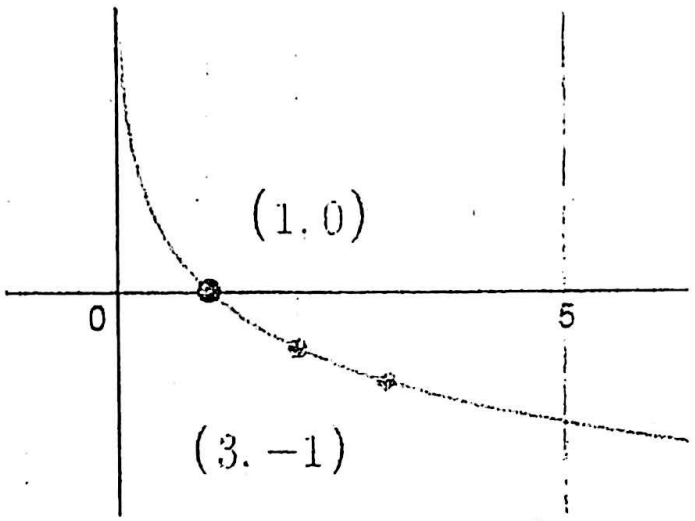
2. Is it possible to evaluate a. $\log_2 16$? b. $\log_2 1$? c. $\log_2 5$? d. $\log_2(-8)$? e. $\log_2 0$?

3. Find the inverse of $y = \log(x - 3) + 4$

4. Describe the transformation of f represented by g. Then graph each function.

   $f(x) = e^x$, $g(x) = e^{x+1} + 3$

5. Given $f(x) = \log_3 x$, Describe the transformation of f represented by g (graphed) Then write a rule for g(x)



7. If $\log_b 5 = 0.5426$, use properties of logarithms to evaluate $\log_b \frac{1}{25}$
8. Use properties of exponents to
   a. expand $\log \frac{2x}{y}$ b. condense $6\log x + 5\log y$
9. Solve the following equations:
   a. $\log_3(5x + 2) = 3$ b. $7(6^{x-3}) = 210$ c. $\log(3x - 8) = \log(2x + 4)$

   d. $16^x = (\frac{1}{4})^{x-5}$ e. $\log_2(x + 6) + \log_2 x = 4$
10. Write an exponential function, $y = ab^x$, whose graph passes through (2, 6) and (5, 6000).

1. Expand $\log_b \frac{2x^5}{y}$ (the base is b it just typed weird)

2. Condense and simplify $2\log_b 5 + \log_b 3 - \log_b 15$

3. Show me how $\log_5 9$ would be written if you applied the change of base formula

4. Solve (show all steps): $\log_2(x - 6) = 3$