Name: _____ Date:_____ Period: _____ **Review**

End-of-Unit 2B Review – Exponential and Logarithmic

Lessons 2.9 through 2.15

Reviews do NOT cover all material from the lessons but will hopefully remind you of key points. To be prepared, you must study all packets from Unit 2B.

1. The function f is given by $f(x) = 3\log_2(x) + 8$. Find $f^{-1}(x)$.

2. What is the solution to the equation $4(2)^{x+5} - 10 = 22$.

3. What are all of the solutions to the inequality: $\ln(x + 10) + \ln 5 \leq \ln(2x + 17)$

4. ***Calculator Active:*** Mr. Sullivan used to collect football cards. When the Cleveland Browns drafted Johnny Manziel he just knew his rookie card would be worth a lot of money over time! Mr. Sullivan kept track of the value after every game Johnny Manziel played. The data is below.

Games Played	1	3	4	9
Value of Rookie Card ($)	57.50	37.77	32.74	18.55

   a) What's a logarithmic regression equation that could model this situation?

   b) How many games would Johnny Manzeil need to play for his card to be worth $10?

5. Let a, b, and c be positive constants. What is an equivalent expression to $\log\left(\frac{a^5b^2}{c^3}\right)$?

6. The function f is given by $f(x) = \log_3(x)$. The function g is given by $g(x) = \log_3(81x)$. Rewrite the function using properties of logarithms and explain any transformations from $f(x)$ to $g(x)$.

7. Using the tables below, determine if the data given is exponential. Explain your answer.

a.

x	5	7	11	19
y	1	2	3	4

b.

x	1	2	3	4
y	1	2	4	8

c.

x	2	3	4	5
$\log y$	3	7	11	15

8. The function f is given by $f(x) = \log(3 - x) + 2$. Find the information below for f.

Asymptote:

Domain: Range:

End Behavior: Sketch of f: