

Name _____

Date _____

Advanced Algebra

Unit 3 Exponential, Log, and Power Functions

Simplify the following using your Log rules:

1) $\log_5 6 - \log_5 4$

2) $\log_5 13 + \log_5 3$

3) $2 \log_{10} x + \log_{10} 5$

4) $5 \log_4 12 - 5 \log_4 2$

5) $3 \log_3 19 - 3 \log_3 38$

6) $\log_7 48 - 4 \log_7 2$

7) $\log_{10} 8 + \log_{10} x + 2 \log_{10} y$

8) $\log_{10} 6 - 3 \log_{10} \frac{1}{3}$

9) $6 \log_8 2 + 2 \log_8 x + 2 \log_8 y$

10) $\log_3 2 + \frac{1}{2} \log_3 y$

11) $10 \log_{10} x + \frac{2}{3} \log_{10} 64$

12) $2 \log_{10} 9 + 5 \log_{10} x + \log_{10} \frac{1}{3}$

Solve the following equations:

$$1) \log_4 2 - \log_4 x = \log_4 \frac{2}{3}$$

$$2) \log_3 6 = \log_3 3 + \log_3 x$$

$$3) \log_4 5 = \log_4 10 - \log_4 x$$

$$4) \log_3 3 = \log_3 x - \log_3 3$$

$$5) \log_3 8 = x \log_3 2$$

$$6) \log_{10} 16 = x \log_{10} 2$$

$$7) \log_2 x = \frac{1}{2} \log_2 4$$

$$8) \frac{1}{3} \log_4 x = \log_4 4$$

Graphing Assignment: **Carefully graph and see how they are related .**

Make table values. Understand when you do an inverse you switch your x and y

$Y = 2^x \rightarrow$ Switch your x and y \rightarrow so $x = 2^y \rightarrow$ Now use your log to solve for y so $y = \log_2 x$

So the Inverse is $y = \log_2 x$

Graph these two functions and see how they are related.