Algebra 2: Assignment #: _____ Name_____

Final Review: Chapter 8

Date_____ Period____

Solve each equation. Round your answers to the nearest ten-thousandth.

1) $3^{p-1} - 4 = 10$

2) $-20^{3x} = -93.6$

3) $5 \cdot 17^{n+9} = 1$

4) $9.1 \cdot 14^{b-7} = 45$

5) $-3.2 \cdot 5^{9-2r} - 5 = -33$

6) $5 \cdot 2^{3x-10} + 8 = 19$

7) $5 \cdot 18^{-5n-8} + 8 = 102$

8) $5 \cdot 16^{-7.2a-6} - 1.6 = 31$

Solve each equation.

9) $\log(2v - 5) = \log(v + 5)$

10) $\log_3(x - 10) = \log_3 23$

11) $\log_{20} x = \log_{20}(x^2 + 7x)$

12) $\log_{17}(40 - 2a) = \log_{17}(a^2 - 5a)$

13) $\log_6(k - 8) = 1$

14) $\log_3 -8p = 3$

15) $4 + \log_{11}(x - 9) = 8$

16) $-6\log_8(n + 1) = 12$

Find the inverse of each function.

17) $y = 10\log_5 x$

18) $y = \log_6(-3x)$

Expand each logarithm.

19) $\log_9 \frac{7^6}{8^6}$

20) $\log_2 \sqrt[3]{8 \cdot 3 \cdot 7}$

Condense each expression to a single logarithm.

21) $6\log_9 x + 18\log_9 y$

22) $\frac{\log_8 u}{3} + \frac{\log_8 v}{3} + \frac{\log_8 w}{3}$

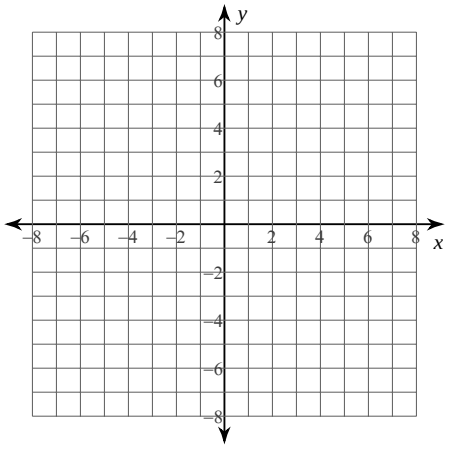
Use the properties of logarithms and the values below to find the logarithm indicated. Do not use a calculator to evaluate the logs.

23) $\log_7 9 \approx 1.1$
$\log_7 12 \approx 1.3$
$\log_7 11 \approx 1.2$
Find $\log_7 \frac{3}{28}$

24) $\log_5 6 \approx 1.1$
$\log_5 7 \approx 1.2$
$\log_5 9 \approx 1.4$
Find $\log_5 \frac{81}{5}$

Identify the domain and range of each. Then sketch the graph.

25) $y = \log_4 (x - 1)$



26) $y = \log_5 (x + 2) - 3$