 Name_____

The Meaning Of Logarithms

Date_____ Period____

Rewrite each equation in exponential form.

1) $\log_6 36 = 2$

2) $\log_{289} 17 = \frac{1}{2}$

3) $\log_{14} \frac{1}{196} = -2$

4) $\log_3 81 = 4$

Rewrite each equation in logarithmic form.

5) $64^{\frac{1}{2}} = 8$

6) $12^2 = 144$

7) $9^{-2} = \frac{1}{81}$

8) $\left(\frac{1}{12}\right)^2 = \frac{1}{144}$

Rewrite each equation in exponential form.

9) $\log_u \frac{15}{16} = v$

10) $\log_v u = 4$

11) $\log_{\frac{7}{4}} x = y$

12) $\log_2 v = u$

13) $\log_u v = -16$

14) $\log_y x = -8$

Rewrite each equation in logarithmic form.

15) $u^{-14} = v$

16) $8^b = a$

17) $\left(\frac{1}{5}\right)^x = y$

18) $6^y = x$

19) $9^y = x$

20) $b^a = 123$

Evaluate each expression.

21) $\log_4 64$

22) $\log_6 216$

23) $\log_4 16$

24) $\log_3 \frac{1}{243}$

25) $\log_5 125$

26) $\log_2 4$

27) $\log_{343} 7$

28) $\log_2 16$

29) $\log_{64} 4$

30) $\log_6 \frac{1}{216}$

Simplify each expression.

31) $12^{\log_{12} 144}$

32) $5^{\log_5 17}$

33) $x^{\log_x 72}$

34) $9^{\log_3 20}$