

Name \_\_\_\_\_

Date \_\_\_\_\_

Advanced Algebra

Unit 3

Inverse of Exponential...Log Functions

**Write the equations in exponential form**

1)  $\log_3 27 = 3$

2)  $\log_4 256 = 4$

3)  $\log_6 36 = 2$

4)  $\log_6 216 = 3$

5)  $\log_2 32 = 5$

6)  $\log_8 64 = 2$

7)  $\log_5 125 = 3$

8)  $\log_1 1 = 3$

**Write each equation in logarithmic form**

9)  $3^5 = 243$

10)  $10^{-12} = 1.318$

11)  $4^{-1} = \frac{1}{4}$

12)  $16^{-1/2} = \frac{1}{4}$

13)  $4^3 = 64$

14)  $13^2 = 169$

15)  $9^{2/3} = 4.327$

16)  $6^4 = 1296$

**Evaluate each. ( You should be able to do these without the calculator)**

17)  $\log_5 25$

18)  $\log_9 9^{-.56}$

19)  $\log_{12} 1$

20)  $\log_9 81$

21)  $\log_4 4^{5/6}$

22)  $\log_4 2$

23)  $\log_{\frac{1}{2}} \frac{1}{2}$

24)  $\log_5(-25)$

25)  $\log_2 1/8$

Solve the following equations for x. You might want to re-write them into exponential form and use your CHART!!!!!!!!!!!!!!!!!!!!

1)  $\log_3 81 = x$

2)  $\log_2 256 = x$

3)  $\log_6 x = -1$

4)  $\log_x 343 = 3$

5)  $\log_x 343 = 3$

6)  $\log_3 x = 5$

7)  $\log_4 x = 2$

8)  $\log_x 64 = 3$

9)  $\log_x 243 = 5$

10)  $\log_x 256 = 8$

11)  $\log_5 x = 1$

12)  $\log_2(x+1) = 1$

13)  $\log_5(x-4) = 0$