

Name: \_\_\_\_\_ Key \_\_\_\_\_

Date: \_\_\_\_\_

Class/Period: \_\_\_\_\_

### Properties of Logarithms Quiz

Find each equation in exponential form:

1.  $\log_5 \frac{1}{125} = -3$

a.  $3^5 = 125$

b.  $5^3 = 125$

c.  $(-3)^5 = 125$

d.  $5^{-3} = \frac{-1}{125}$

2.  $\log_7 \frac{1}{2401} = -4$

a.  $7^{-4} = \frac{1}{2401}$

b.  $7^{-4} = 2401$

c.  $7^4 = \frac{1}{2401}$

d.  $4^{-7} = \frac{1}{2401}$

Evaluate each logarithmic expression:

3.  $\log_2 4$

a.  $2^2$

b.  $2$

c. 4

d.  $2^4$

4.  $\log_4 \frac{1}{64}$

a.  $4^{\frac{1}{64}}$

b.  $4^3$

c. 3

d.  $-3$

Solve each equation for  $x$ :

5.  $\log_{64} x = \frac{5}{6}$

a.  $\frac{160}{3}$

b.  $\frac{5}{6}$

c.  $32$

d. 64

6.  $\log_4 x = 4$

a. 1

c. 4

c.  $256$

d. 16

7.  $\log_3 8 + \log_3 x = \log_3 10$

a. 0.80

b.  $1.25$

c. 2

d. 18

8.  $\log_2 (x + 3) - \log_2 5 = \log_2 13$

a. 123

b. 65

c.  $62$

d. 126