

Assignment

Date _____ Period _____

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

1) $\log 12 \approx 1.1$
 $\log 8 \approx 0.9$
 $\log 7 \approx 0.8$
Find $\log \frac{8}{7}$

2) $\log 8 \approx 0.9$
 $\log 12 \approx 1.1$
 $\log 7 \approx 0.8$
Find $\log 144$

3) $\log 12 \approx 1.1$
 $\log 7 \approx 0.8$
 $\log 8 \approx 0.9$
Find $\log \frac{1}{144}$

4) $\log 12 \approx 1.1$
 $\log 7 \approx 0.8$
 $\log 8 \approx 0.9$
Find $\log \frac{1}{49}$

5) $\log 8 \approx 0.9$
 $\log 7 \approx 0.8$
 $\log 12 \approx 1.1$
Find $\log \frac{12}{7}$

Expand each logarithm.

6) $\log x^3$

7) $\log \sqrt[3]{u}$

8) $\log \frac{x}{y}$

9) $\log (u \cdot v)$

$$10) \log_6 (u^5 \cdot v)^2$$

$$11) \log_3 \sqrt{a \cdot b \cdot c}$$

$$12) \log_4 (x^2 y^2)$$

$$13) \log_2 (ab^2)^2$$

Use a calculator to approximate each to the nearest thousandth.

$$14) \log_5 2.3$$

$$15) \log_2 28$$

$$16) \log_3 13$$

$$17) \log_4 31$$

Answers to Assignment (ID: 1)

1) 0.1

3) -2.2

5) 0.3

7) $\frac{\log u}{3}$

9) $\log u + \log v$

11) $\frac{\log_3 a}{2} + \frac{\log_3 b}{2} + \frac{\log_3 c}{2}$

13) $2\log_2 a + 4\log_2 b$

15) 4.807

17) 2.477