

## Rewriting Logs in Terms of Others

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  $\log \frac{7}{8}$

2)  $\log 12 \approx 1.1$   
 $\log 8 \approx 0.9$   
 $\log 7 \approx 0.8$   
Find  $\log \frac{2}{3}$

3)  $\log 12 \approx 1.1$   
 $\log 7 \approx 0.8$   
 $\log 8 \approx 0.9$   
Find  $\log 64$

4)  $\log 8 \approx 0.9$   
 $\log 12 \approx 1.1$   
 $\log 7 \approx 0.8$   
Find  $\log 96$

5)  $\log 7 \approx 0.8$   
 $\log 12 \approx 1.1$   
 $\log 8 \approx 0.9$   
Find  $\log \frac{1}{64}$

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

7)  $\log_3 10 \approx 2.1$   
 $\log_3 11 \approx 2.2$   
 $\log_3 8 \approx 1.9$   
Find  $\log_3 330$

8)  $\log_8 12 \approx 1.2$   
 $\log_8 7 \approx 0.9$   
 $\log_8 9 \approx 1.1$   
Find  $\log_8 \frac{81}{7}$

9)  $\log_5 11 \approx 1.5$   
 $\log_5 6 \approx 1.1$   
 $\log_5 4 \approx 0.9$   
Find  $\log_5 264$

10)  $\log_9 8 \approx 0.9$   
 $\log_9 11 \approx 1.1$   
 $\log_9 6 \approx 0.8$   
Find  $\log_9 486$

11)  $\log_6 10 \approx 1.3$   
 $\log_6 7 \approx 1.1$   
 $\log_6 8 \approx 1.2$   
Find  $\log_6 \frac{3}{50}$

12)  $\log_6 8 \approx 1.2$   
 $\log_6 7 \approx 1.1$   
 $\log_6 10 \approx 1.3$   
Find  $\log_6 800$

13)  $\log 6 = A$

$\log 9 = B$

$\log 4 = C$

Find  $\log \frac{1}{16}$

15)  $\log_5 12 = R$

$\log_5 9 = S$

$\log_5 11 = T$

Find  $\log_5 \frac{1}{12}$

17)  $\log_8 6 = A$

$\log_8 9 = B$

$\log_8 10 = C$

Find  $\log_8 729$

19)  $\log_6 10 = X$

$\log_6 7 = Y$

$\log_6 4 = Z$

Find  $\log_6 \frac{1}{9}$

21)  $\log_5 6 = P$

$\log_5 4 = Q$

$\log_5 9 = R$

Find  $\log_5 \frac{1}{270}$

23)  $\log_7 3 = X$

$\log_7 8 = Y$

$\log_7 10 = Z$

Find  $\log_7 \frac{15}{32}$

14)  $\log_4 7 = R$

$\log_4 6 = S$

$\log_4 9 = T$

Find  $\log_4 24$

16)  $\log_9 7 = A$

$\log_9 4 = B$

$\log_9 10 = C$

Find  $\log_9 \frac{1}{16}$

18)  $\log_7 6 = R$

$\log_7 8 = S$

$\log_7 10 = T$

Find  $\log_7 392$

20)  $\log_8 6 = A$

$\log_8 9 = B$

$\log_8 7 = C$

Find  $\log_8 729$

22)  $\log_8 10 = P$

$\log_8 12 = Q$

$\log_8 11 = R$

Find  $\log_8 \frac{5}{256}$

24)  $\log_8 12 = P$

$\log_8 5 = Q$

$\log_8 9 = R$

Find  $\log_8 \frac{32}{27}$

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

**-0.1**

2)  $\log 12 \approx 1.1$   
 $\log 8 \approx 0.9$   
 $\log 7 \approx 0.8$   
 Find  $\log \frac{2}{3}$

**-0.2**

3)  $\log 12 \approx 1.1$   
 $\log 7 \approx 0.8$   
 $\log 8 \approx 0.9$   
 Find  $\log 64$

**1.8**

4)  $\log 8 \approx 0.9$   
 $\log 12 \approx 1.1$   
 $\log 7 \approx 0.8$   
 Find  $\log 96$

**2**

5)  $\log 7 \approx 0.8$   
 $\log 12 \approx 1.1$   
 $\log 8 \approx 0.9$   
 Find  $\log \frac{1}{64}$

**-1.8**

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

**-0.8**

7)  $\log_3 10 \approx 2.1$   
 $\log_3 11 \approx 2.2$   
 $\log_3 8 \approx 1.9$   
 Find  $\log_3 330$

**5.3**

8)  $\log_8 12 \approx 1.2$   
 $\log_8 7 \approx 0.9$   
 $\log_8 9 \approx 1.1$   
 Find  $\log_8 \frac{81}{7}$

**1.3**

9)  $\log_5 11 \approx 1.5$   
 $\log_5 6 \approx 1.1$   
 $\log_5 4 \approx 0.9$   
 Find  $\log_5 264$

**3.5**

10)  $\log_9 8 \approx 0.9$   
 $\log_9 11 \approx 1.1$   
 $\log_9 6 \approx 0.8$   
 Find  $\log_9 486$

**2.8**

11)  $\log_6 10 \approx 1.3$   
 $\log_6 7 \approx 1.1$   
 $\log_6 8 \approx 1.2$   
 Find  $\log_6 \frac{3}{50}$

**-1.6**

12)  $\log_6 8 \approx 1.2$   
 $\log_6 7 \approx 1.1$   
 $\log_6 10 \approx 1.3$   
 Find  $\log_6 800$

**3.8**

13)  $\log 6 = A$      $-2C$   
 $\log 9 = B$   
 $\log 4 = C$   
Find  $\log \frac{1}{16}$

15)  $\log_5 12 = R$   
 $\log_5 9 = S$   
 $\log_5 11 = T$   
Find  $\log_5 \frac{1}{12}$   
 $-R$

17)  $\log_8 6 = A$   
 $\log_8 9 = B$   
 $\log_8 10 = C$   
Find  $\log_8 729$   
 $3B$

19)  $\log_6 10 = X$   
 $\log_6 7 = Y$   
 $\log_6 4 = Z$   
Find  $\log_6 \frac{1}{9}$   
 $Z - 2$

21)  $\log_5 6 = P$   
 $\log_5 4 = Q$   
 $\log_5 9 = R$   
Find  $\log_5 \frac{1}{270}$   
 $-1 - P - R$

23)  $\log_7 3 = X$   
 $\log_7 8 = Y$   
 $\log_7 10 = Z$   
Find  $\log_7 \frac{15}{32}$   
 $Z + X - 2Y$

14)  $\log_4 7 = R$      $S + 1$   
 $\log_4 6 = S$   
 $\log_4 9 = T$   
Find  $\log_4 24$

16)  $\log_9 7 = A$   
 $\log_9 4 = B$   
 $\log_9 10 = C$   
Find  $\log_9 \frac{1}{16}$   
 $-2B$

18)  $\log_7 6 = R$   
 $\log_7 8 = S$   
 $\log_7 10 = T$   
Find  $\log_7 392$   
 $S + 2$

20)  $\log_8 6 = A$   
 $\log_8 9 = B$   
 $\log_8 7 = C$   
Find  $\log_8 729$   
 $3B$

22)  $\log_8 10 = P$   
 $\log_8 12 = Q$   
 $\log_8 11 = R$   
Find  $\log_8 \frac{5}{256}$   
 $P - 3$

24)  $\log_8 12 = P$   
 $\log_8 5 = Q$   
 $\log_8 9 = R$   
Find  $\log_8 \frac{32}{27}$   
 $P + 1 - 2R$