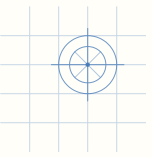


Log laws — The quotient law

Name: _____

Date: _____



Write each difference as one logarithm.

① $\log_3 18 - \log_3 6 = \log_3 \underline{3}$

$$\begin{aligned}\log_3 m - \log_3 n &= \log_3 (m \div n) \\ 18 \div 6 &= 3 \\ &= \log_3 3 \\ 3 &= 3^1 \\ \log_3 3 &= 1\end{aligned}$$

② $\log_3 144 - \log_3 12 = \log_3 \underline{\hspace{2cm}}$

③ $\log_5 18 - \log_5 3 = \log_5 \underline{\hspace{2cm}}$

④ $\log_5 56 - \log_5 7 = \log_5 \underline{\hspace{2cm}}$

⑤ $\log_5 16 - \log_5 4 = \log_5 \underline{\hspace{2cm}}$

⑥ $\log_2 44 - \log_2 11 = \log_2 \underline{\hspace{2cm}}$

⑦ $\log_5 56 - \log_5 8 = \log_5 \underline{\hspace{2cm}}$

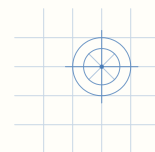
⑧ $\log_3 15 - \log_3 3 = \log_3 \underline{\hspace{2cm}}$

⑨ $\log_{10} 108 - \log_{10} 12 = \log_{10} \underline{\hspace{2cm}}$

⑩ $\log_{10} 36 - \log_{10} 6 = \log_{10} \underline{\hspace{2cm}}$



Log laws · The quotient law — Answer key



1. $\log_3 18 - \log_3 6 = \log_3 3$,
and that is 1

2. $\log_3 144 - \log_3 12 = \log_3$
12

3. $\log_5 18 - \log_5 3 = \log_5 6$

4. $\log_5 56 - \log_5 7 = \log_5 8$

5. $\log_5 16 - \log_5 4 = \log_5 4$

6. $\log_2 44 - \log_2 11 = \log_2$
4, and that is 2

7. $\log_5 56 - \log_5 8 = \log_5 7$

8. $\log_3 15 - \log_3 3 = \log_3 5$

9. $\log_{10} 108 - \log_{10} 12 =$
 $\log_{10} 9$

10. $\log_{10} 36 - \log_{10} 6 =$
 $\log_{10} 6$