

Student Name: _____

Score: _____

Expand Using Laws of Logarithms

$$\log_2(3 \times 11)$$

Answer: _____

$$\log_5\left(\frac{7}{2}\right)$$

Answer: _____

$$\log_2\left(\frac{4 \times 6}{5}\right)$$

Answer: _____

$$\log_6\left(\frac{9}{2 \times 8}\right)$$

Answer: _____

$$\log_{10}(5 \times 4^3)$$

Answer: _____

$$\log_3(2 \times 7)^5$$

Answer: _____

$$\log_{12} \frac{4^2}{9}$$

Answer: _____

$$\log_7 \left(\frac{3}{4}\right)^2$$

Answer: _____

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Answers

$\log_2(3 \times 11)$	$\log_5\left(\frac{7}{2}\right)$
Answer: $\log_2 3 + \log_2 11$	Answer: $\log_5 7 - \log_5 2$
$\log_2\left(\frac{4 \times 6}{5}\right)$	$\log_6\left(\frac{9}{2 \times 8}\right)$
Answer: $\log_2 4 + \log_2 6 - \log_2 5$	Answer: $\log_6 9 - \log_6 2 - \log_6 8$
$\log_{10}(5 \times 4^3)$	$\log_3(2 \times 7)^5$
Answer: $\log_{10} 5 + 3 \log_{10} 4$	Answer: $5 \log_3 2 + 5 \log_3 7$
$\log_{12} \frac{4^2}{9}$	$\log_7 \left(\frac{3}{4}\right)^2$
Answer: $2 \log_{12} 4 - \log_{12} 9$	Answer: $2 \log_7 3 - 2 \log_7 4$