

Student Name: \_\_\_\_\_

Score: \_\_\_\_\_

**Solve for the Unknown Using Product and Quotient Rule**

Problems

Work Space

$$\log_3 x^2 + \log_3 5 - \log_3 x = \log_3 15$$

$$x = \underline{\hspace{2cm}}$$

$$\log_5(x^2 - 4) + \log_5 2 - \log_5(x - 2) = \log_5 8$$

$$x = \underline{\hspace{2cm}}$$

$$\log_7 x + \log_7 3 - \log_7 5 = \log_7 2$$

$$x = \underline{\hspace{2cm}}$$

$$\log_9 \frac{x^2}{4} + \log_9 6 - \log_9 3 = \log_9 x$$

$$x = \underline{\hspace{2cm}}$$

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### Answers

$$\log_3 x^2 + \log_3 5 - \log_3 x = \log_3 15$$

$$x = 3$$

$$\log_5(x^2 - 4) + \log_5 2 - \log_5(x - 2) = \log_5 8$$

$$x = 2$$

$$\log_7 x + \log_7 3 - \log_7 5 = \log_7 2$$

$$x = \frac{10}{3}$$

$$\log_9 \frac{x^2}{4} + \log_9 6 - \log_9 3 = \log_9 x$$

$$x = 0 \text{ or } 2$$