

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

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

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

Problems

Work Space

$\log_3 5 + \log_3 x = \log_3 30$  $x = \underline{\hspace{2cm}}$	
$\log_5 180 - \log_5 x = \log_5 12$  $x = \underline{\hspace{2cm}}$	
$\log_2 12 + \log_2 x - \log_2 10 = \log_2 6$  $x = \underline{\hspace{2cm}}$	
$\log_4 9 - \log_4 6 + \log_4 x = \log_4 12$  $x = \underline{\hspace{2cm}}$	
$\log_3 14 + \log_3 9 - \log_3 x = \log_3 6$  $x = \underline{\hspace{2cm}}$	

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### Answers

$\log_3 5 + \log_3 x = \log_3 30$  $x = 6$	
$\log_5 180 - \log_5 x = \log_5 12$  $x = 15$	
$\log_2 12 + \log_2 x - \log_2 10 = \log_2 6$  $x = 5$	
$\log_4 9 - \log_4 6 + \log_4 x = \log_4 12$  $x = 8$	
$\log_3 14 + \log_3 9 - \log_3 x = \log_3 6$  $x = 21$	