

## SOLVE PROBLEMS USING PROPORTIONS

#1 MATT HIKE 10 MILES IN 4 HOURS.  
AT THAT RATE, HOW FAR CAN HE  
HIKE IN 18 HOURS?

$$\frac{\text{MILES}}{\text{HOURS}} = \frac{10}{4} = \frac{x}{18}$$

*(Note: Red arrows indicate cross-multiplication: 5 x 9 from 10 to 18, and 2 x 9 from 4 to 18)*

MATT CAN HIKE  
45 MILES IN  
18 HOURS.

$$\frac{10}{4} = \frac{x}{18}$$

*(Note: Red lines cross out the original fraction, and red arrows indicate the cross-multiplication process)*

$$5 \times 18 = 2x$$

$$\frac{90}{2} = \frac{2x}{2}$$

$$45 = x$$

#2 JANE WON A PIE EATING CONTEST,  
EATING 6 PIES IN 10 MINUTES. AT  
THAT RATE, HOW MANY PIES CAN SHE  
EAT IN 2 HOURS.

$$\frac{\text{PIES}}{\text{MINUTES}} = \frac{6}{10} = \frac{x}{120}$$

*(Note: Green arrows indicate cross-multiplication: x12 from 6 to 120, and x12 from 10 to 120)*

$$x = 72$$

JANE CAN EAT  
72 PIES IN  
2 HOURS.



#3 A RECIPE CALLS FOR 2.5 CUPS OF SUGAR TO MAKE 12 COOKIES. HOW MUCH SUGAR IS NEEDED TO MAKE 36 COOKIES.

$$\frac{\text{SUGAR}}{\text{COOKIES}} = \frac{2.5}{12} = \frac{x}{36}$$

$\xrightarrow{\times 3}$        $\xrightarrow{\times 3}$

$$\begin{array}{r} 2.5 \\ \times 3 \\ \hline 7.5 \end{array}$$

7.5 CUPS OF SUGAR FOR 36 COOKIES.