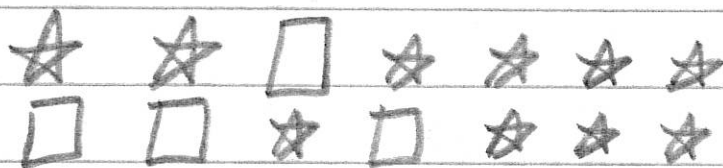


Ratios

$$3 \text{ to } 5 / 3:5 / \frac{3}{5}$$

- 1) Write a ratio of stars to squares in simplest form.



$$\frac{10}{4} \div 2 = \frac{5}{2}$$

- 2) Write a ratio that compares people that pick red to people that pick green.

$$\frac{24}{60} \div 12 = \frac{2}{5}$$

Favorite Color	
Color	#
Red	24
Blue	45
Green	60
Yellow	10

Rates

\$13 per hour / 55 mph / 75 miles per 3 gallons

Unit Rate \rightarrow rate with a denominator of 1

Find the unit rate.

$$1) \frac{\$12}{4 \text{ lb}} \div 4 = \frac{\$3}{1 \text{ lb}} = \boxed{\$3/\text{lb}}$$

$$2) \frac{200 \text{ words}}{10 \text{ minutes}} \div 10 = \frac{20 \text{ words}}{1 \text{ minute}} = \boxed{20 \text{ words/min}}$$

$$3) \frac{\$350}{14 \text{ hours}} \div 14 = \frac{\$25}{1 \text{ hour}} = \boxed{\$25/\text{hour}}$$
$$\begin{array}{r} 25 \\ 14 \overline{) 350} \\ \underline{-28} \\ 70 \\ \underline{-70} \\ 0 \end{array}$$

Proportions

Determine if the ratios form a proportion.

1) \$28 in 4 hours ; \$35 in 5 hours

<u>Method #1</u>	<u>Method #2</u>
$\left. \begin{array}{l} \frac{\$28 \div 4}{4 \div 4} = \frac{\$7}{1 \text{ hr}} \\ \frac{\$35 \div 5}{5 \div 5} = \frac{\$7}{1 \text{ hr}} \end{array} \right\} \text{Yes}$	$\begin{array}{l} \frac{28}{4} \overset{?}{\neq} \frac{35}{5} \\ 28 \cdot 5 \overset{?}{=} 35 \cdot 4 \\ 140 = 140 \\ \text{Yes} \end{array}$

2) 20 miles in 5 hours ; 45 miles in 9 hours

$\left. \begin{array}{l} \frac{20 \div 5}{5 \div 5} = \frac{4}{1} \\ \frac{45 \div 9}{9 \div 9} = \frac{5}{1} \end{array} \right\} \text{No}$	$\begin{array}{l} \frac{20}{5} \overset{?}{\neq} \frac{45}{9} \\ 20 \cdot 9 \overset{?}{=} 45 \cdot 5 \\ 180 \neq 225 \\ \text{No} \end{array}$
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Solving Proportions

Solve each proportion.

1) $\frac{4}{5} = \frac{x}{10}$

$$5 \cdot x = 4 \cdot 10$$

$$\frac{5x}{5} = \frac{40}{5}$$

$$\boxed{x = 8}$$

2) $\frac{6}{y} = \frac{3}{4}$

$$3 \cdot y = 6 \cdot 4$$

$$\frac{3y}{3} = \frac{24}{3}$$

$$\boxed{y = 8}$$

3) $\frac{m}{8} = \frac{1}{4}$

$$\frac{4m}{4} = \frac{8}{4}$$

$$\boxed{m = 2}$$

4) $\frac{2}{3} = \frac{n}{9}$

$$\frac{3n}{3} = \frac{18}{3}$$

$$\boxed{n = 6}$$