

Lesson 5.3

learning Target:

Write and Solve Proportions

$$\frac{3}{5} = \frac{12}{x}$$

Two Ways to Write Proportions

Writing a Proportion using a Table.

	Last Month	This Month
✓ Purchase	2 ringtone	3 ringtone
✓ Total Cost	6 dollars	x dollars

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Use the columns or the rows to write a proportion.

$$\frac{2}{6} = \frac{3}{x}$$

Writing a Proportion

Black Bean Soup

1.5 cups black beans

0.5 cup salsa

2 cups water

1 tomato

2 teaspoons seasoning

A chef increases the amounts of ingredients in a recipe to make a proportional recipe. The new recipe has 6 cups of black beans. Write a proportion that gives the number x of tomatoes in the new recipe.

Organize the information in a table.

	Original Recipe	New Recipe
Black Beans	1.5 c	6
Tomatoes	1 τ	x

$$\frac{\text{bl. beans}}{\tau} = \frac{1.5}{1} = \frac{6}{x}$$

Writing a Proportion

Black Bean Soup

1.5 cups black beans

0.5 cup salsa

2 cups water

1 tomato

2 teaspoons seasoning

A chef increases the amounts of ingredients in a recipe to make a proportional recipe. The new recipe has 6 cups of black beans.

Write a proportion that gives the amount y of water in the new recipe.

$$\begin{array}{l} \text{BB} \\ \text{W} \end{array} \frac{1.5}{2} = \frac{6}{y}$$

Writing a Percent Proportion

$$\frac{\text{part}}{\text{total}} = \frac{\%}{100}$$

$$\frac{41}{50} = \frac{x}{100} \quad x = 82\%$$

Think about your last test score.

Writing a Percent Proportion

Write a proportion to find how many points a student needs to score on the test to get the given score.

Test worth 50 points; score of 90%

$$\frac{\text{part}}{\text{total}} = \frac{\%}{100}$$

$$\frac{X}{50} = \frac{90}{100}$$

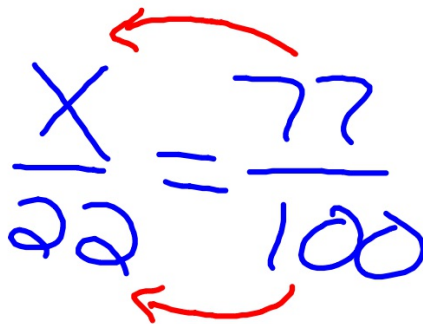
$$X = 45$$

Writing a Percent Proportion

Write a proportion to find how many Points a student needs to score the test to get the given score.

Quiz worth 22 points; score of 77%

$$\frac{\text{part}}{\text{total}} = \frac{\%}{100}$$

$$\frac{X}{22} = \frac{77}{100}$$
A handwritten blue equation $\frac{X}{22} = \frac{77}{100}$ is shown. Two red curved arrows indicate the cross-multiplication process: one arrow starts from the top-left 'X' and points to the bottom-right '100', and another arrow starts from the top-right '77' and points to the bottom-left '22'.

Solve Proportions using mental math

Solve $\frac{3}{2} = \frac{x}{8}$.

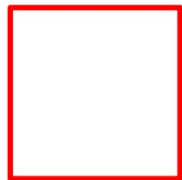
$\times 4$

$$x = 12$$

Solve Proportions using mental math

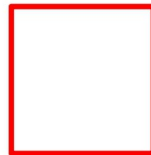
3. $\frac{5}{8} = \frac{20}{d}$

$d = 32$



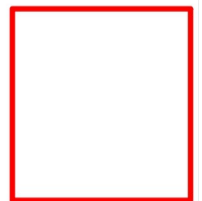
4. $\frac{7}{z} = \frac{14}{10}$

$z = 5$



5. $\frac{21}{24} = \frac{x}{8}$

$x = 7$



Solve Proportions using mental math

A school has 950 students. The ratio of female students to all students is $\frac{48}{95}$. Write and solve a proportion to find the number f of students who are female.

Female
All Students

$$\frac{48}{95} = \frac{f}{950}$$

$$f = 480$$

12:14 , 18:w

$$\frac{12}{14} = \frac{18}{w}$$

Homework

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13-22

and #25

