5.3 Writing Proportions

One way to write a proportion is to use a table.

Ex: Write 4 different proportions that are modeled by this table.

	Last Month	This Month
Purchase	2 ringtones	3 ringtones
Total Cost	6 dollars	x dollars

Use Columns

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

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

Use Rows

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

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

Ex: A chef increases the amounts of ingredients in the old Black Bean Soup 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.

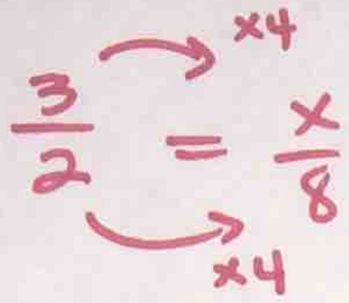
Black Bean Soup

1.5 cups black beans
0.5 cup salsa
2 cups water
1 tomato
2 teaspoons seasoning

	Original Recipe	New Recipe
Black Beans	1.5 cups	6 cups
Tomatoes	1 tomato	x tomatoes

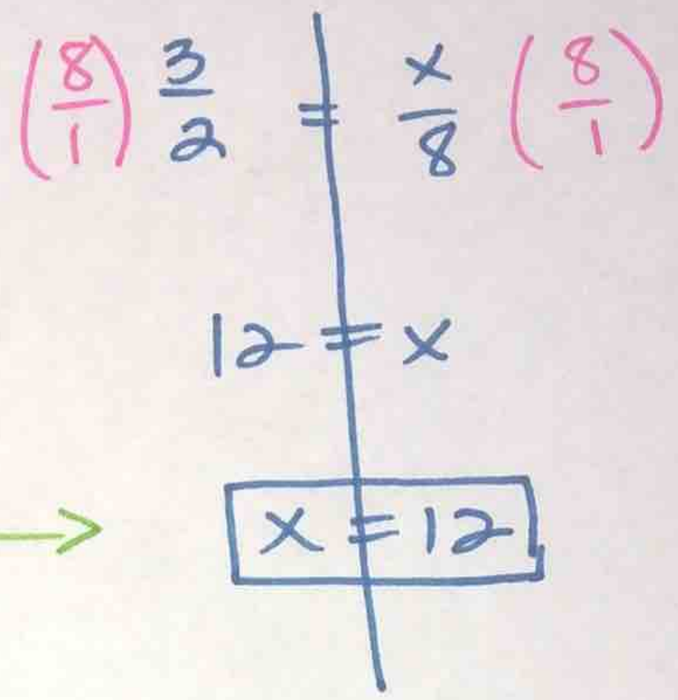
$\frac{1.5}{1} = \frac{6}{x}$

Ex: What are 2 different ways to solve this proportion: $\frac{3}{2} = \frac{x}{8}$



$x = 3(4)$

$x = 12$



same!

Try These:

(1) Using the Black Bean Soup recipe, write a proportion to find the amount of water needed for the new recipe.

$\frac{1.5}{2} = \frac{6}{y}$

Solve the proportions.

(2) $\frac{5}{8} = \frac{20}{d}$ $d = 32$

(3) $\frac{7}{z} = \frac{14}{10}$ $z = 5$

(4) $\frac{21}{24} = \frac{x}{8}$ $x = 7$

(5) 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.

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

480 female students