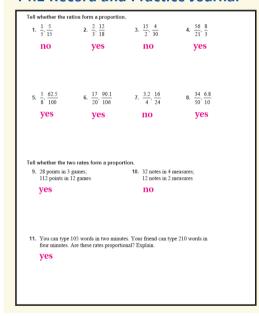
$56 \div 8 =$	$143 \div 13 =$	$36 \div 6 =$	$14 \div 7 =$
$8 \div 1 =$	$150 \div 10 =$	$30 \div 6 =$	$70 \div 7 =$
$84 \div 6 =$	$64 \div 8 =$	$81 \div 9 =$	$10 \div 1 =$
$98 \div 14 =$	$65 \div 13 =$	$30 \div 15 =$	$120 \div 8 =$
$40 \div 8 =$	$5 \div 1 =$	$28 \div 2 =$	$12 \div 12 =$
$48 \div 4 =$	$3 \div 1 =$	$96 \div 12 =$	$24 \div 2 =$
$72 \div 6 =$	$18 \div 6 =$	$24 \div 4 =$	$6 \div 1 =$
$36 \div 3 =$	$24 \div 8 =$	$108 \div 9 =$	$12 \div 6 =$
$18 \div 2 =$	$70 \div 5 =$	$36 \div 4 =$	$12 \div 4 =$
$78 \div 13 =$	$21 \div 7 =$	$40 \div 5 =$	$7 \div 1 =$
$45 \div 3 =$	$77 \div 7 =$	$7 \div 7 =$	$120 \div 15 =$
$28 \div 7 =$	$42 \div 3 =$	$72 \div 8 =$	$52 \div 4 =$
$55 \div 5 =$	$35 \div 5 =$	$20 \div 10 =$	$100 \div 10 =$
$8 \div 8 =$	$182 \div 14 =$	$48 \div 12 =$	$16 \div 4 =$
$140 \div 10 =$	$28 \div 14 =$	$80 \div 10 =$	$54 \div 9 =$
$54 \div 6 =$	$9 \div 9 =$	$75 \div 15 =$	$195 \div 13 =$

$56 \div 8 = 7$	$143 \div 13 = 11$	$36 \div 6 = 6$	$14 \div 7 = 2$
$8 \div 1 = 8$	$150 \div 10 = 15$	$30 \div 6 = 5$	$70 \div 7 = 10$
$84 \div 6 = 14$	$64 \div 8 = 8$	$81 \div 9 = 9$	$10 \div 1 = 10$
$98 \div 14 = 7$	$65 \div 13 = 5$	$30 \div 15 = 2$	$120 \div 8 = 15$
$40 \div 8 = 5$	$5 \div 1 = 5$	$28 \div 2 = 14$	$12 \div 12 = 1$
$48 \div 4 = 12$	$3 \div 1 = 3$	$96 \div 12 = 8$	$24 \div 2 = 12$
$72 \div 6 = 12$	$18 \div 6 = 3$	$24 \div 4 = 6$	$6 \div 1 = 6$
$36 \div 3 = 12$	$24 \div 8 = 3$	$108 \div 9 = 12$	$12 \div 6 = 2$
$18 \div 2 = 9$	$70 \div 5 = 14$	$36 \div 4 = 9$	$12 \div 4 = 3$
$78 \div 13 = 6$	$21 \div 7 = 3$	$40 \div 5 = 8$	$7 \div 1 = 7$
$45 \div 3 = 15$	$77 \div 7 = 11$	$7 \div 7 = 1$	$120 \div 15 = 8$
$28 \div 7 = 4$	$42 \div 3 = 14$	$72 \div 8 = 9$	$52 \div 4 = 13$
$55 \div 5 = 11$	$35 \div 5 = 7$	$20 \div 10 = 2$	$100 \div 10 = 10$
$8 \div 8 = 1$	$182 \div 14 = 13$	$48 \div 12 = 4$	$16 \div 4 = 4$
$140 \div 10 = 14$	$28 \div 14 = 2$	$80 \div 10 = 8$	$54 \div 9 = 6$
$54 \div 6 = 9$	$9 \div 9 = 1$	$75 \div 15 = 5$	$195 \div 13 = 15$

Learning Objective: Students will be able to write proportions to represent real life situations, and solve by using cross multiplication and inverse operations.

### Homework Answers

#### 14.2 Record and Practice Journal



Learning Objective: Students will be able to write proportions to represent real life situations, and solve by using cross multiplication and inverse operations.

Lesson 14.3

January 8, 2015

### Essential Question:

How can you write a proportion that solves a problem in real life?

Lesson 14.3 January 8, 2015

## Lesson Objective:

Students will be able to:

write proportions to represent real life situations, and solve by using cross multiplication and inverse operations.

### Self-Evaluation Scale

Score	Description
4	I can teach other students how to write proportions to represent real life situations, and solve by using cross multiplication and inverse operations.
3	I can write proportions to represent real life situations, and solve by using cross multiplication and inverse operations.
2	I recognize, but still need help to write proportions to represent real life situations, and solve by using cross multiplication and inverse operations.
1	I do not know how to write proportions to represent real life situations, and solve by using cross multiplication and inverse operations.

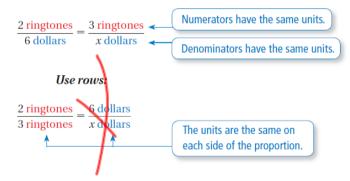
Learning Objective: Students will be able to write proportions to represent real life situations, and solve by using cross multiplication and inverse operations.

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

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

Use the columns or the rows to write a proportion.

#### Use columns:



Learning Objective: Students will be able to write proportions to represent real life situations, and solve by using cross multiplication and inverse operations.

#### **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 cups	6 cups
Tomatoes	1 tomato	x tomatoes

• One proportion is

Learning Objective: Students will be able to write proportions to represent real life situations, and solve by using cross multiplication and inverse operations.

ing cross multiplication and inverse operations.

Learning Objective: Students will be able to write proportions to represent real life situations, and solve by using cross multiplication and inverse operations.

### 2 Solving Proportions Using Mental Math

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

**Step 1:** Think: The product of 2 and what number is 8?

numerator by 4 to find x.  

$$3 \times 4 = 12$$

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

Step 2: Because the product of

2 and 4 is 8, multiply the

The solution is x = 12.

3 Solving Proportions Using ...

cross multiplication and inverse operations.

Solve 
$$\frac{3}{2} = \frac{x}{8}$$
.  
 $3 + \frac{1}{2} = 2x$   
 $2 + \frac{1}{2} = 2x$ 

### Reduce, then use mental math

$$\frac{7}{11} \frac{14}{2x} = \frac{35}{X}$$

$$x = 35$$

$$\frac{5}{9} = \frac{3}{w}$$

$$\frac{1}{5} = \frac{3}{2} = \frac{3}{2}$$

$$\frac{1}{5} = \frac{3}{2} = \frac{3}{2} = \frac{3}{2}$$

$$\frac{1}{5} = \frac{3}{2} = \frac{3}$$

Learning Objective: Students will be able to write proportions to represent real life situations, and solve by using cross multiplication and inverse operations

### Inverse Operation

# The operation that reverses the effect of another operation.

Example: Addition and subtraction are inverse operations. Start with 7, then add 3 we get 10, now subtract 3 and we get back to 7.

Another Example: Multiplication and division are inverse operations. Start with 6, multiply by 2 we get 12, now divide by 2 and we get back to 6.

$$3W = 3$$

$$3Y = 5W$$

$$5W = 3$$

$$W = 53$$

$$W = 53$$

$$\frac{22}{t} = \frac{2}{7}$$

$$\frac{154}{2} = 2t$$

$$\frac{2}{3}$$

$$\frac{2}{7} = t$$

Learning Objective: Students will be able to write proportions to represent real life situations, and solve by using cross multiplication and inverse operations

### Assignment

Complete problems:

8, 10, 16, 18, 20, 22, & 24

on pages 618 - 619 in your Big Ideas Text Book.

Learning Objective: Students will be able to write proportions to represent real life situations, and solve by using cross multiplication and inverse operations.

### Assignment Answers

8. 
$$\frac{12 \text{ points}}{14 \text{ shots}} = \frac{18 \text{ points}}{w \text{ shots}}$$

10. 
$$\frac{15 \text{ miles}}{2.5 \text{ hours}} = \frac{m \text{ miles}}{4 \text{ hours}}$$

**16.** 
$$z = 5$$
**18.**  $k = 15$ 
**20.**  $b = 20$ 

22. a. 
$$\frac{1 \text{ trombone}}{3 \text{ violas}} = \frac{t \text{ trombones}}{9 \text{ violas}}$$
b. 3 trombones

**24.** no; The solution of that equation is x = 1.5, but using mental math, you can see that the solution of the proportion is x = 24.

Learning Objective: Students will be able to write proportions to represent real life situations, and solve by using cross multiplication and inverse operations.

### Homework

In your Big Ideas Record and Practice Journal page 316.