Name_____

Pre-Algebra Notes

Week 5: Lessons 6.2 and 6.3

Writing and Solving Proportions (6-2)

Math Vocab.

1. <u>proportion</u>- an equation that states that two _____ are _____

$\frac{2}{3} = \frac{8}{12}$ Multiply both numerator and denominator by _____

Examples

1. Solving a Proportion Using Equivalent Ratios

Solve the proportion $\frac{5}{6} = \frac{x}{18}$

<u>Extra Practice</u>

$\frac{2}{7} = \frac{x}{21}$ $\frac{3}{8} = \frac{x}{32}$ $\frac{x}{2} = \frac{20}{10}$ $\frac{x}{48} = \frac{6}{12}$

You can use the same methods you used to solve equations to solve proportions that have a variable in the numerator

2. Solving a Proportion Using Algebra

Solve the proportion $\frac{x}{12} = \frac{2}{8}$

<u>Extra Practice</u>

Setting up a proportion ⇒ make sure you use comparable rations

Yesterday you rode your bike 18 miles in 2.5 hours. Today you plan to ride for 3.5 hours. If you ride at the same rate as yesterday how far will you ride?

3. Writing and Solving a Proportion

Each day, an elephant eats 5 pounds of food for every 100 pounds of its weight. How much food does a 9300 pound elephant eat per day?

How much food does a 12,500 pound elephant eat per day?

Solving Proportions Using Cross Products (6-3)

Math Vocab.

1. cross product- the product of the numerator of one ratio and the denominator of another.

The cross products of a proportion are _____

$\frac{3}{5}, \frac{6}{10}$ $\frac{2}{3}, \frac{6}{11}$

You can use cross products to tell whether two ratios form a proportion
If the cross products are equal then the ratios form a proportion

Examples

1. Determining If Ratios Form a Proportion

Tell whether the ratios form a proportion

a. $\frac{9}{51}, \frac{6}{34}$ b. $\frac{12}{20}, \frac{32}{50}$

Extra Practice

You can use cross products property to solve proportions

2. Writing and Solving a Proportion
Human hair grows about 0.7 cm in 2 weeks. How long does hair take to grow 14 centimeters?

Extra Practice

Summary: 3 methods to solve a proportion
1. Equivalent ratios

2. Algebra

3. Cross Products