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LESSON
5-3 Solving Proportions

Interactive Study Guide

To solve a proportion using **cross products**, multiply the numerator of one ratio with the denominator of the other ratio. If the cross products are equal, then the ratios are in proportion.

Vocabulary
cross products

Solving Proportions Using Cross Products

Solve the proportion using cross products.

$$\frac{g}{3} = \frac{15}{9}$$

_____ • $g = 3 \cdot$ _____ Multiply g and _____. Multiply 3 and _____.

_____ $g =$ _____ Simplify both products.

$\frac{9g}{\quad} = \frac{45}{\quad}$ _____ each side by _____ to isolate the variable.

$g =$ _____ Solve for g .

Problem Solving Application: Measurement

The weight of 3 oranges is 5 pounds. What is the weight of 5 oranges?

1. Understand the problem

What is the question asking? How much do _____ oranges _____?

2. Make a plan

$\frac{5 \text{ pounds}}{\quad \text{oranges}} = \frac{w}{\quad \text{oranges}}$ Set up a proportion using the information given.

3. Solve

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

_____ • 5 = 3 • _____ Multiply cross products.

_____ = _____ w Multiply.

$\frac{25}{\quad} = \frac{3w}{\quad}$ _____ each side by _____ to isolate the variable.

8.33 = w Solve for w . Five oranges weigh _____ pounds.

4. Check your answer

The proportion is $\frac{5}{3} = \frac{w}{5}$. Check: $5 \cdot 5 =$ _____ and $3 \cdot$ _____ = 25

Since the ratios have the _____ cross products, the ratios are _____.