

Section 5.4

Solving Proportions

Proportion: an equation stating that two ratios are equal

$$\frac{3}{5} = \frac{27}{45}$$

Cross Products are used to prove that two ratios are a proportion.

$$\frac{10}{18} = \frac{15}{27}$$

$$18 \times 15 = 10 \times 27$$

$$270 = 270$$

Are these ratios proportions?

$$\frac{6}{9} = \frac{14}{21}$$

$$6 \cdot 21 = 9 \cdot 14$$

$$126 = 126 \quad \underline{\text{Yes}}$$

$$\frac{8}{12} = \frac{16}{22}$$

$$8 \cdot 22 = 12 \cdot 16$$

$$176 \neq 192 \quad \underline{\text{No}}$$

Solving Proportions

Use the Cross Product

$$\frac{x}{8} = \frac{15}{40}$$

$$8 \cdot 15 = 40 \cdot x$$
$$\frac{120}{40} = \frac{40x}{40}$$
$$3 = x$$

$$\frac{2}{6} = \frac{9}{x}$$

$$\rightarrow 2 \cdot x = 9 \cdot 6$$
$$2x = 54$$
$$\frac{2x}{2} = \frac{54}{2}$$
$$x = 27$$

Homework:

- ① p.261, # 2-16 even,
22-28 even, 41, 48

Show both cross products &
answer

- ② Dimensional Analysis #1-4
Worksheet

