Jadwin-Geometry-5A Period-Off Site Learning Packet Day 5
Ratios and Proportions day 2

Proportion – is an equation stating that two ratios are equal. $\frac{a}{b} = \frac{c}{d}$ where a and d ate the extremes and b and c are the means.

Cross Products Property

In a proportion, if $\frac{a}{b} = \frac{c}{d}$ and b and $d \neq 0$, then $ad = bc$.

Example: Solve the proportion $\frac{7}{x} = \frac{56}{72}$.

504 = 56x

x = 9

Example: Solve the proportion $\frac{3}{8} = \frac{x}{56}$

168 = 8x

x = 21

Example: Solve the proportion $\frac{2y}{9} = \frac{8}{4y}$.

$8y^2 = 72$

$y^2 = 9$

y = 3

Properties of Proportions

ALGEBRA	NUMBERS
The proportion $\frac{a}{b} = \frac{c}{d}$ is equivalent to the following:	The proportion $\frac{1}{3} = \frac{2}{6}$ is equivalent to the following:
$ad = bc$	$1(6) = 3(2)$
$\frac{b}{a} = \frac{d}{c}$	$\frac{3}{1} = \frac{6}{2}$
$\frac{a}{c} = \frac{b}{d}$	$\frac{1}{2} = \frac{3}{6}$

Example: Given that $18c = 24d$, find the ratio of d to c in simplest form.

$\frac{d}{c} = \frac{18}{24}$

$\frac{d}{c} = \frac{3}{4}$

Example: Given that $16s = 20t$, find the ratio t:s in simplest form.

$\frac{t}{s} = \frac{16}{20}$

$\frac{t}{s} = \frac{4}{5}$

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Solve the following proportions.

1. $\frac{9}{t} = \frac{36}{28}$

2. $\frac{x}{32} = \frac{15}{16}$

3. $\frac{24}{42} = \frac{y}{7}$

4. $\frac{2a}{3} = \frac{8}{3a}$

5. Given 5b = 20c, find the ration $\frac{b}{c}$ in simplest form.

6. Given 24x = 9y, find the ratio x:y in simplest form.