

Shortened class period!

No Bellwork 11/30/2011

1. Simplify the ratio 1200cm:1.8m.
2. Solve $\frac{1}{s+8} = \frac{3}{36}$.
3. Find the geometric mean of 42 and 12.

Geometry

6.2 Use Proportions to Solve Geometry Problems

Standard(s): 2,4

Vocabulary:

- Scale Drawing:** A drawing that is the same shape as the object it represents.
- Scale:** A ratio that describes how the dimensions in the drawing are related to the actual dimensions of the object.

KEY CONCEPT	<i>For Your Notebook</i>
Additional Properties of Proportions	
2. Reciprocal Property If two ratios are equal, then their reciprocals are also equal.	$\text{If } \frac{a}{b} = \frac{c}{d}, \text{ then } \frac{b}{a} = \frac{d}{c}$ <p style="text-align: right;">Reciprocal</p>
3. If you interchange the means of a proportion, then you form another true proportion.	$\text{If } \frac{a}{b} = \frac{c}{d}, \text{ then } \frac{a}{c} = \frac{b}{d}$ <p style="text-align: right;">Switch the Means</p>
4. In a proportion, if you add the value of each ratio's denominator to its numerator, then you form another true proportion.	$\text{If } \frac{a}{b} = \frac{c}{d}, \text{ then } \frac{a+b}{b} = \frac{c+d}{d}$ <p style="text-align: right;">Add the bottom to the top</p>

Proportions involving actuals and models:

$$\frac{\text{SCALE}}{\text{actual}} = \frac{\text{FIND}}{\text{actual}}$$

Complete a Statement

Complete the statement.

$$\text{If } \frac{6}{x} = \frac{5}{y}, \text{ then } \frac{6}{5} = \frac{x}{y}$$

$$\text{If } \frac{x}{12} = \frac{y}{2}, \text{ then } \frac{x+12}{12} = \frac{y+2}{2}$$

True or False?

Decide whether the statement is true or false.

$$\text{If } \frac{x}{4} = \frac{6}{8}, \text{ then } \frac{x}{6} = \frac{4}{8}. \quad \text{True}$$

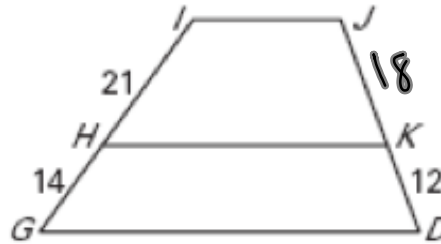
$$\frac{x}{4} = \frac{6}{8} \rightarrow \frac{8}{4} = \frac{6}{x} \quad \text{False}$$

$$\text{If } \frac{x}{y} = \frac{5}{8}, \text{ then } \frac{x+y}{y} = \frac{13}{8} \quad \text{True}$$

Use Proportions with Geometric Figures

Use the diagram and the given information to find the unknown length.

$$\frac{HI}{GH} = \frac{JK}{KD}, \text{ find } JD.$$



~~$$\frac{21}{14} = \frac{JK}{12}$$~~

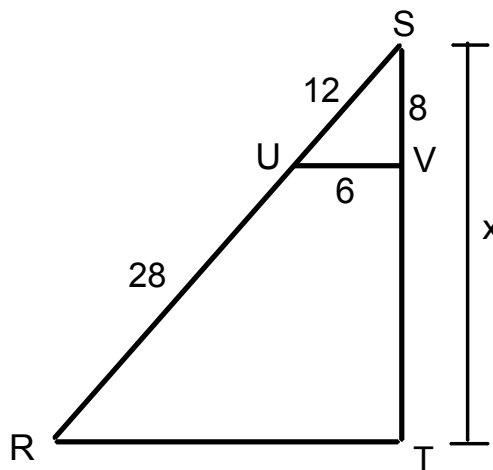
$$\frac{252}{14} = \frac{14JK}{14}$$

$$JK = 18$$

$$JD = 18 + 12$$

$$JD = 30$$

$$\frac{SV}{VT} = \frac{SU}{UR}, \text{ find } ST.$$



Use a Scale Drawing

A model of Sherman Tank has a scale of 1 cm:16 cm.

SCALE **FIND**

$$\frac{\text{model}}{\text{actual}} = \frac{\text{model}}{\text{actual}}$$



A. The length of the actual tank is 584 cm. What is the length of the model?

~~$$\frac{1 \text{ cm}}{16 \text{ cm}} = \frac{x \text{ cm}}{584 \text{ cm}}$$~~

$$\frac{16x}{16} = \frac{584}{16}$$

$$x = 36.5 \text{ cm}$$

B. The width of the model is 16.375 cm. What is the width of the actual tank?

$$\frac{1 \text{ cm}}{16 \text{ cm}} = \frac{16.375 \text{ cm}}{x \text{ cm}}$$

$$x = 16 \cdot 16.375$$

$$x = 262 \text{ cm}$$

Homework Assignment

Worksheet 6.2B

