Reteaching 3-5

Proportions and Similar Figures

**OBJECTIVE:** Find missing measures of similar figures

**MATERIALS:** None

Setting up a proportion can help determine the missing lengths from similar figures. Remember the following:

- Always compare corresponding sides when writing the ratios.
- Be consistent by keeping sides of the same figure either in the denominators or numerators.

**Example**

$$\triangle ABC \sim \triangle DEF$$

Find the length of $x$.

$BC$ corresponds to $EF$

$AC$ corresponds to $DF$

$$\frac{AC}{DF} = \frac{BC}{EF}$$

$$\frac{x}{10} = \frac{12}{8}$$

$\Rightarrow$ Notice the numerators, $AC$ and $BC$, are sides of the same triangle.

$\Rightarrow$ Substitute appropriate values.

$8x = 10 \cdot 12$

$\Rightarrow$ Write the cross products.

$$\frac{8x}{8} = \frac{120}{8}$$

$\Rightarrow$ Divide each side by 8.

$x = 15$

$\Rightarrow$ Simplify.

**Exercises**

Find the length of $x$.

1. $\triangle TUV \sim \triangle QUP$

2. $\triangle KLM \sim \triangle KHJ$

3. $\triangle PQR \sim \triangle MNP$

4. $\triangle ABC \sim \triangle DEF$