

Geometry

BELL WORK

If 3 pounds of apples cost \$3.57, what is the cost of 15 pounds of apples?

$\frac{\text{apples}}{\$}$	$\frac{3}{3.57} = \frac{15}{X}$	$\begin{array}{r} 3.57 \\ \times 5 \\ \hline 17.85 \end{array}$
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If four tickets to a show cost \$17.60, what is the cost of seven tickets to the same show?

$\frac{\text{tickets}}{\$}$	$\frac{4}{17.60} = \frac{7}{X}$	$\frac{123.2}{4} = \frac{4X}{4}$
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$\$30.80 = X$

7-2 Similar Polygons

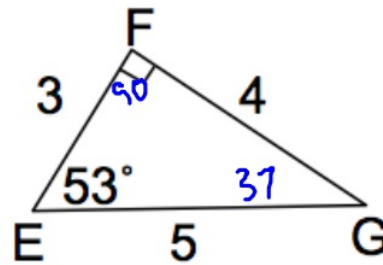
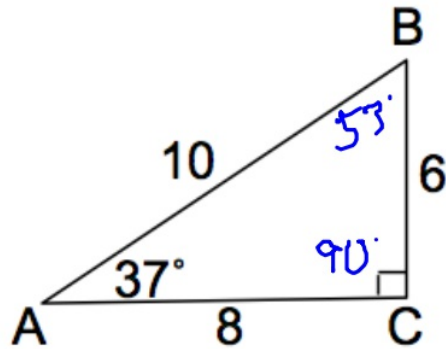
Today you will: Identify similar figures and solve problems using properties of similar figures

Content standard: G-SRT Similarity: Understand similarity in terms of similarity transformations

Similar polygons have the same shape but not necessarily the same size.

2 polygons are similar if and only if their corresponding angles are congruent and their corresponding sides are proportional.

The ratio of the lengths of the corresponding sides of two similar polygons is called the scale factor.



Are these triangles similar? Justify.

\angle 's are congruent

$$\frac{10}{5} = \frac{8}{4} = \frac{6}{3}$$

Yes

sides are in proportion.

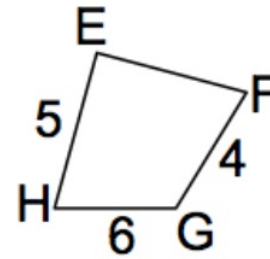
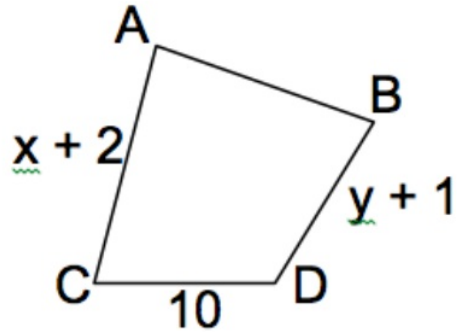
Write a similarity statement.

$$\triangle ABC \sim \triangle FEG$$

What is their scale factor?

$$2:1$$

The figures are similar. Solve for x & y .



$$\frac{x+2}{5} = \frac{10}{6}$$

$$6(x+2) = 50$$

$$\begin{array}{r} 6x + 12 = 50 \\ -12 \quad -12 \\ \hline \end{array}$$

$$\frac{6x}{6} = \frac{38}{6}$$

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

$$\frac{y+1}{4} = \frac{10}{6}$$

$$6(y+1) = 40$$

$$\begin{array}{r} 6y + 6 = 40 \\ -6 \quad -6 \\ \hline 6y = 34 \\ \frac{6y}{6} = \frac{34}{6} \end{array}$$

$$y = 5\frac{4}{6}$$

A replica of the Golden Gate Bridge is 3 feet long. The actual bridge is 6,450 feet long. What is the scale factor?

$$3 : 6,450$$

$\div 3$

$\div 3$

$$1 : 2,150$$

If the height of the towers above the water is 746 feet, how far above the water should the model be?

$$\frac{\text{model}}{\text{actual}} = \frac{1}{2150} = \frac{x}{746}$$

$$\frac{746}{2150} = \frac{2150x}{2150}$$

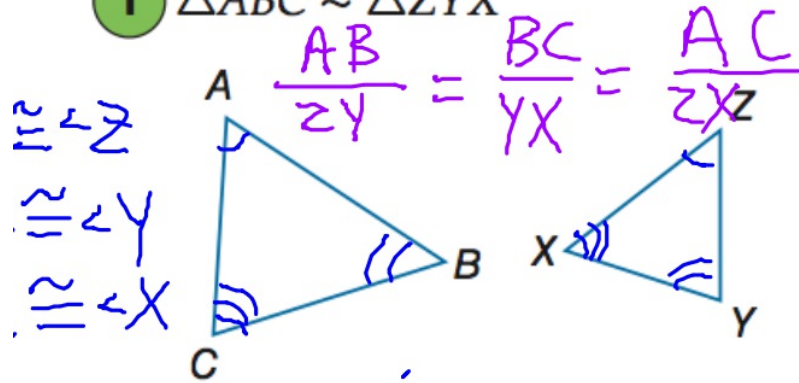
$$0.346 = x$$

ft

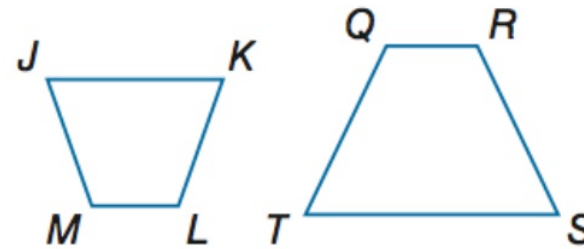
Assignment 7.2: pg 468 - 470 # 1-7, 35, 36

List all pairs of congruent angles, and write a proportion that relates the corresponding sides for each pair of similar polygons.

1 $\triangle ABC \sim \triangle ZYX$

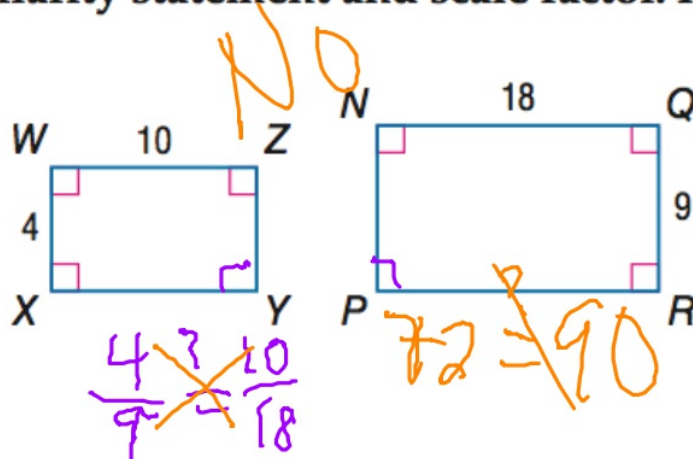


2. $JKLM \sim TSRQ$

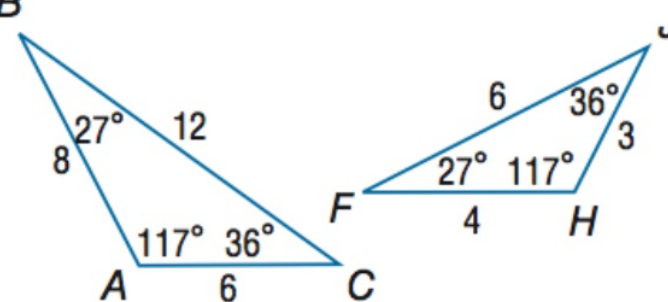


Determine whether each pair of figures is similar. If so, write the similarity statement and scale factor. If not, explain your reasoning.

3.

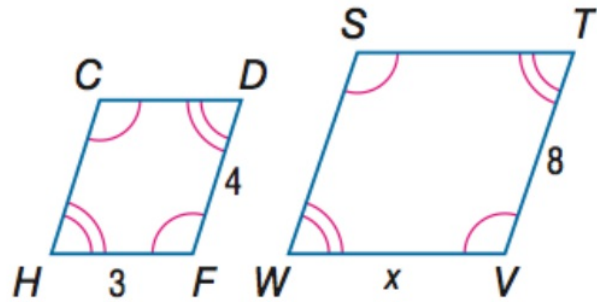


4.

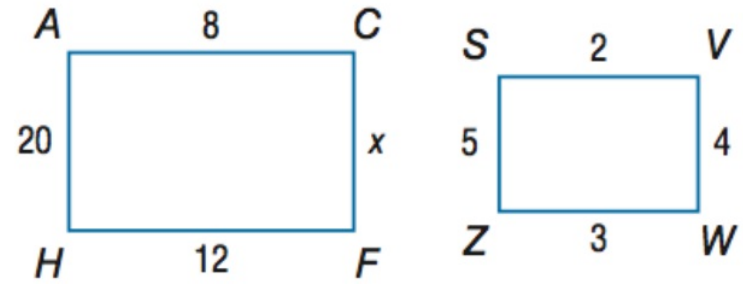


Each pair of polygons is similar. Find the value of x .

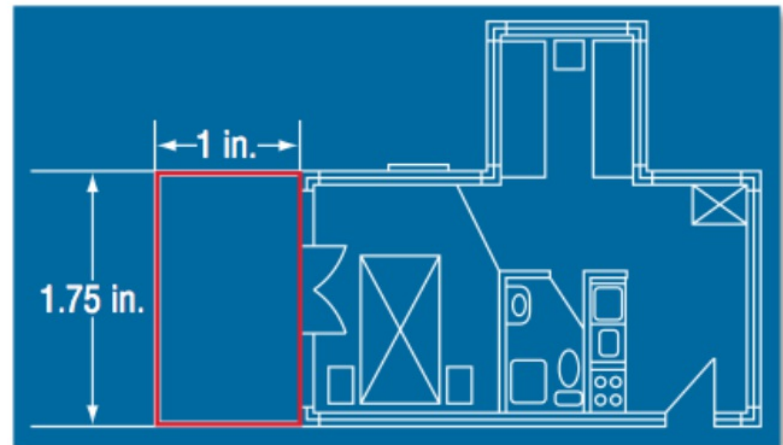
5.



6.



7. **DESIGN** On the blueprint of the apartment shown, the balcony measures 1 inch wide by 1.75 inches long. If the actual length of the balcony is 7 feet, what is the perimeter of the balcony?



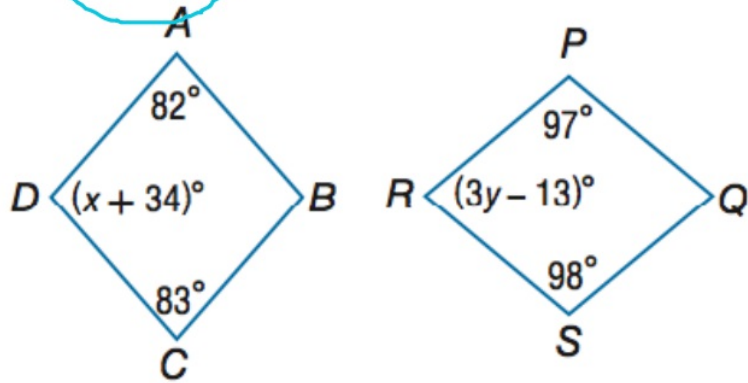
$$\frac{1.75}{84} = \frac{1}{x}$$

$$\frac{1.75x}{1.75} = \frac{84}{1.75} \quad x =$$



Find the value of each variable.

35 $ABCD \sim QSRP$



$$x + 34 = 97$$

36. $\triangle JKL \sim \triangle WYZ$

