List the pairs of congruent angles and the extended proportion that relates the corresponding sides for the similar polygons.

1. \( ABCD \sim WXYZ \)
   \[
   \begin{align*}
   \angle A & \cong \angle W \\
   \angle B & \cong \angle G \\
   \angle C & \cong \angle H \\
   \angle D & \cong \angle I \\
   \frac{AB}{WX} = \frac{BC}{XY} = \frac{CD}{YZ} = \frac{DA}{ZW} \\
   \frac{GH}{KJ} = \frac{HI}{LJ} = \frac{IJ}{KL} = \frac{JG}{IL}
   \end{align*}
   \]

2. \( \triangle GHI \sim \triangle KJL \)

Determine whether the polygons are similar. If so, write a similarity statement and give the scale factor. If not, explain.

3. \( \triangle ADE \sim \triangle BFG \)

4. \( \triangle QRS \sim \triangle TUV \)

5. \( \square OLMN \sim \square PQRS \)

6. \( \triangle ABC \sim \triangle DEF \)

Algebra The polygons are similar. Find the value of each variable.

7. \( \triangle YX^M \sim \triangle 92^M \)

8. \( \triangle ab^C \sim \triangle 92^C \)
9. You want to enlarge a 3 in.-by-5 in. photo. The paper you will print on is 8.5 in.-by-14 in. What is the largest size the photo can be?

10. For art class, you need to make a scale drawing of the Parthenon using the scale 1 in. = 5 ft. The Parthenon is 228 ft long. How long should you make the building in your scale drawing?

11. Ella is reading a map with a scale of 1 in. = 20 mi. On the map, the distance Ella must drive is 4.25 in. How many miles is this?

Algebra Find the value of $z$. Give the scale factor of the polygons.

12. $\triangle JKL \sim \triangle QRS$

13. The scale factor of $ABCD$ to $EFGH$ is $7 : 20$. What is the scale factor of $EFGH$ to $ABCD$?

In the diagram below, $\triangle NOP \sim \triangle WXY$. Find each of the following.

14. the scale factor of $\triangle NOP$ to $\triangle WXY$

15. $m \angle X$

16. $m \angle Y$

17. $\frac{NP}{WY}$

18. $WX$

19. $NP$

20. A company makes rugs. Their smallest rug is a 2 ft-by-3 ft rectangle. Their largest rug is a similar rectangle. If one side of their largest rug is 18 ft, what are the possible dimensions of their largest rug?
7-2 Practice  Form K

Similar Polygons

List the pairs of congruent angles and the extended proportion that relates the corresponding sides for the similar polygons.

1. \(ABCD \sim WXYZ\)

\[\angle A \equiv \angle W\]
\[\angle C \equiv \angle Y\]
\[
\begin{align*}
\frac{AB}{WX} &= \frac{BC}{XY} = \frac{CD}{YZ} = \frac{DA}{ZW}
\end{align*}
\]

2. \(\triangle GHI \sim \triangle KJL\)

\[\angle G \equiv \angle K\]
\[\angle I \equiv \angle L\]
\[
\begin{align*}
\frac{GH}{KJ} &= \frac{HI}{JL} = \frac{IG}{LK}
\end{align*}
\]

Determine whether the polygons are similar. If so, write a similarity statement and give the scale factor. If not, explain.

3. \(CDEF \sim QRST; 3 : 4\)

5. no; corresponding sides not proportional

6. \(\triangle DBC \sim \triangle JHI; 3 : 2\)

Algebra  The polygons are similar. Find the value of each variable.

7. 6; 8

8. 7.2; 6
9. You want to enlarge a 3 in-by-5 in. photo. The paper you will print on is 8.5 in.-by-14 in. What is the largest size the photo can be? \text{8.4 in.-by-14 in.}

10. For art class, you need to make a scale drawing of the Parthenon using the scale 1 in. = 5 ft. The Parthenon is 228 ft long. How long should you make the building in your scale drawing? \text{45.6 in.}

11. Ella is reading a map with a scale of 1 in. = 20 mi. On the map, the distance Ella must drive is 4.25 in. How many miles is this? \text{85 mi}

\textbf{Algebra} \hspace{0.5cm} \text{Find the value of } z. \text{ Give the scale factor of the polygons.}

12. $\triangle JKL \sim \triangle QRS \; 2; \; 1 \div 3$

13. The scale factor of $ABCD$ to $EFGH$ is $7 : 20$. What is the scale factor of $EFGH$ to $ABCD$? \text{20 : 7}

In the diagram below, $\triangle NOP \sim \triangle WXY$. Find each of the following.

14. the scale factor of $\triangle NOP$ to $\triangle WXY \; 2 : 5$

15. $m\angle X \; 58$

16. $m\angle Y \; 73$

17. $\frac{NP}{WY} \; \frac{2}{5}$

18. $WX \; 15$

19. $NP \; 4.8$

20. A company makes rugs. Their smallest rug is a 2 ft-by-3 ft rectangle.
   Their largest rug is a similar rectangle. If one side of their largest rug is 18 ft, what are the possible dimensions of their largest rug? \text{18 ft-by-27 ft or 12 ft-by-18 ft}