NAME _____ DATE _____ PERIOD ____

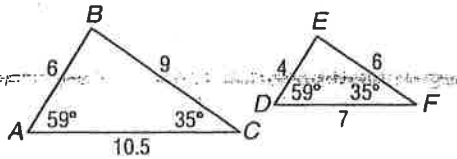
6-2

Skills Practice

Similar Polygons

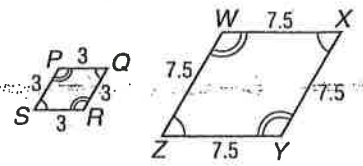
Determine whether each pair of figures is similar. Justify your answer.

1.



yes, $\triangle ABC \sim \triangle DEF$
angles are congruent
sides are proportional with a scale factor of $\frac{3}{2}$.

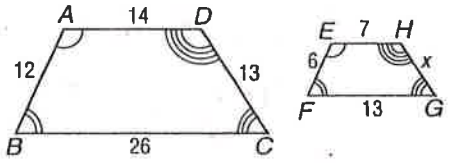
2.



yes, PQRS ~ WXYZ
angles are congruent
sides are proportional with scale factor of 0.4

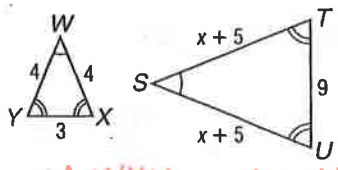
Each pair of polygons is similar. Write a similarity statement, and find x, the measure(s) of the indicated side(s), and the scale factor.

3. $\overline{GH}$



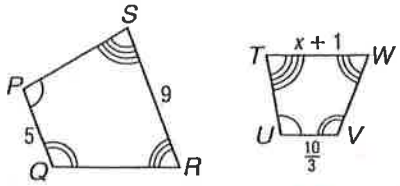
ABCD ~ EFGH
$x = 6.5$
GH = 6.5
scale factor = 2

4. $\overline{ST}$ and $\overline{SU}$



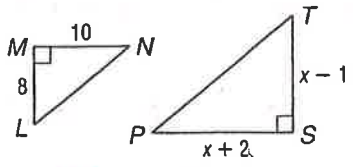
$\triangle WXY \sim \triangle STU$ (or $\triangle SUT$)
$x = 7$
ST = SU = 12
scale factor: 1/3

5. $\overline{WT}$



PQRS ~ UVWT
$x = 5$
WT = 6
scale factor = $\frac{3}{2}$

6. $\overline{TS}$ and $\overline{SP}$



$\triangle LMN \sim \triangle TSP$
$x = 13$
TS = 12
SP = 15
scale factor: $\frac{2}{3}$

Lesson 6-2

NAME _____ DATE _____ PERIOD ____

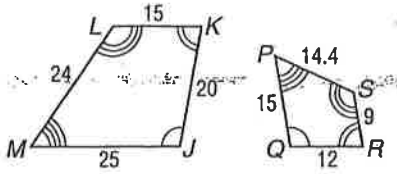
6-2

Practice

Similar Polygons

Determine whether each pair of figures is similar. Justify your answer.

1.

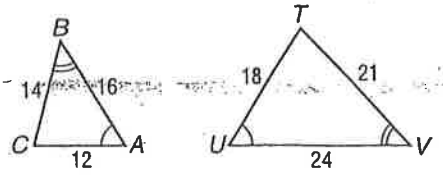


JKLM ~ QRSP

angles ≅

sides proportional with scale factor of $\frac{5}{3}$

2.



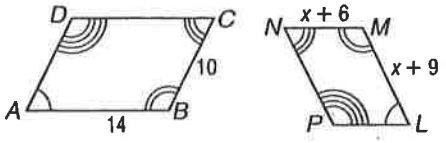
$\triangle ABC \sim \triangle UVT$

angles ≅

Sides proportional with scale factor of $\frac{2}{3}$

Each pair of polygons is similar. Write a similarity statement, and find x, the measure(s) of the indicated side(s), and the scale factor.

3. $\overline{LM}$ and $\overline{MN}$



ABCD ~ LMNP

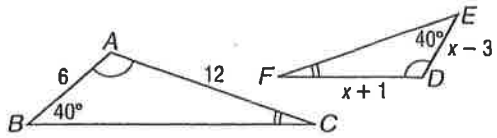
$x = \frac{3}{2}$

LM = 10.5

MN = 7.5

scale factor: $4/3$

4. $\overline{DE}$ and $\overline{DF}$



$\triangle ABC \sim \triangle DEF$

x = 7

DE = 4

DF = 8

Scale factor: $\frac{3}{2}$

5. COORDINATE GEOMETRY Triangle ABC has vertices $A(0, 0)$, $B(-4, 0)$, and $C(-2, 4)$. The coordinates of each vertex are multiplied by 3 to create $\triangle AEF$. Show that $\triangle AEF$ is similar to $\triangle ABC$.

AB = 4 BC = CA = $2\sqrt{5}$ (by using distance formula)

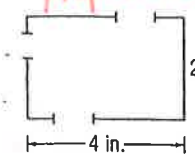
AE = 12 EF = FA = $6\sqrt{5}$

scale factor is $\frac{1}{3}$, $\angle A \cong \angle A$ (by the reflexive property)

and $\overline{BC} \parallel \overline{EF}$ so $\angle B \cong \angle E$ and $\angle C \cong \angle F$ (corresponding angles)

since angles are congruent and sides are proportional

6. INTERIOR DESIGN Graham used the scale drawing of his living room to decide where to place furniture. Find the dimensions of the living room if the scale in the drawing is 1 inch = 4.5 feet.



$\triangle ABC \sim \triangle AEF$

18 ft by 11 ft. 3in

or 18 ft by 11.25 ft.