

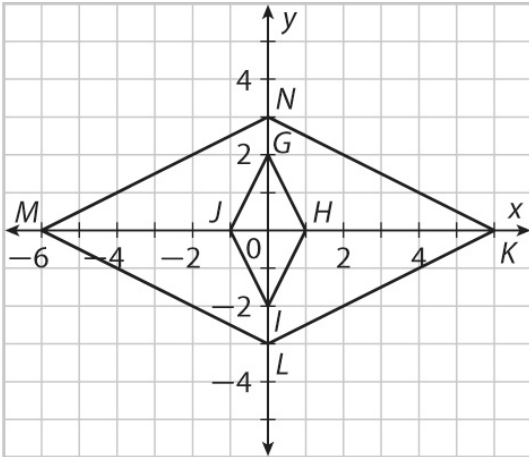
LESSON
11-2

Proving Figures are Similar Using Transformations

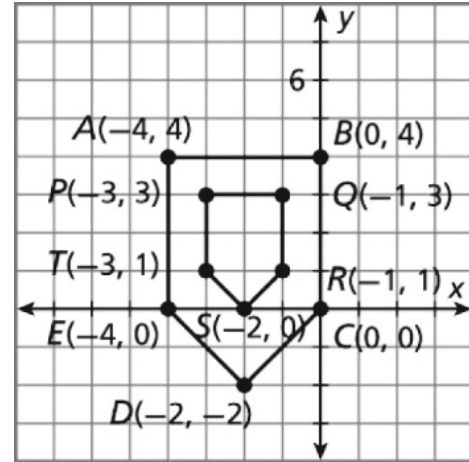
Practice and Problem Solving: A/B

For Problems 1–2, prove that the figures are similar by describing (in words) a sequence of transformations that maps the first figure to the second.

1. *GHIJ* and *KLMN*



2. *ABCDE* and *PQRST*



For Problem 3-4 plot each polygon on the grid. Show that the polygons are similar by describing transformations that map the first polygon to the second.

3. $A(-6, 3)$, $B(-3, 9)$, $C(3, 6)$
 $G(-2, 1)$, $H(-1, 3)$, $J(1, 2)$

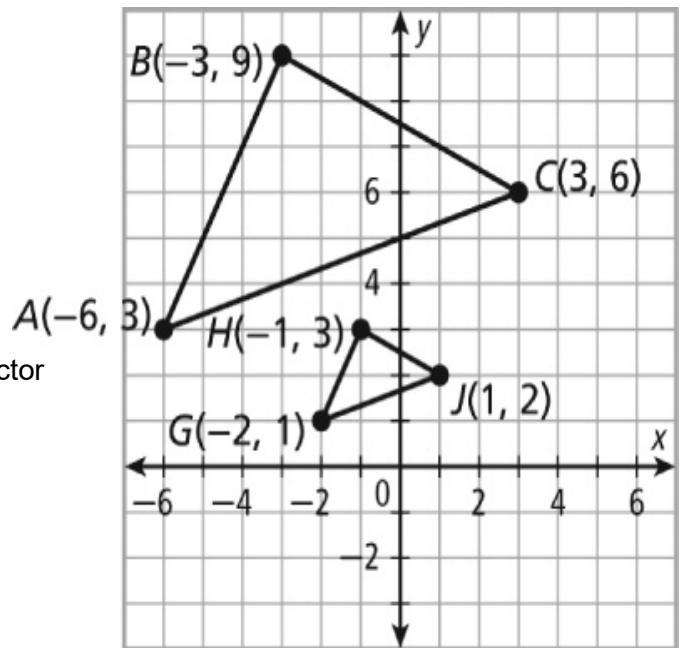
Each coordinate of $\triangle ABC$ can be multiplied by $\frac{1}{3}$ to give the corresponding coordinate

of \triangle _____ . The transformation of $\triangle ABC$

to $\triangle GHJ$ is a _____ with a scale factor

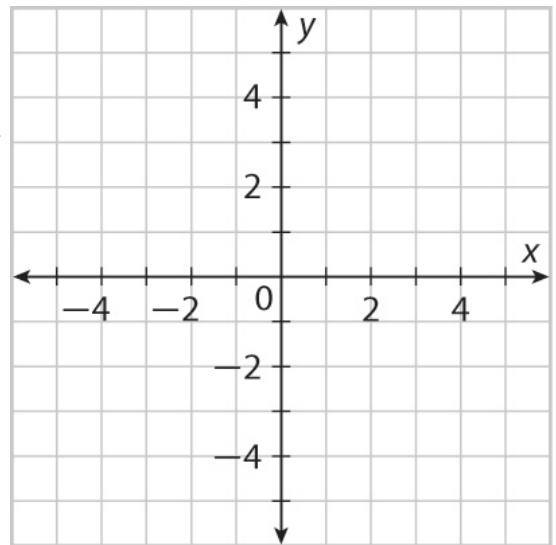
of _____ .

Therefore the triangles are _____ .



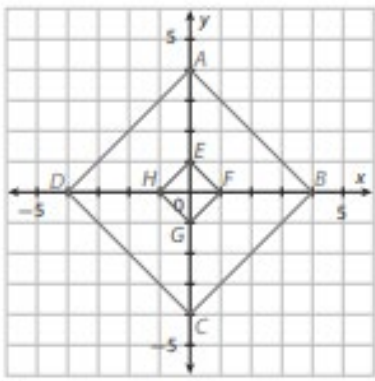
4. $T(-2, -3)$, $U(0, 1)$, $V(2, -3)$
 $X(-4, -6)$, $Y(0, 2)$, $Z(4, -6)$

Each coordinate of $\triangle TUV$ can be multiplied by _____
 to give the corresponding coordinate of \triangle _____.
 The transformation of $\triangle TUV$ to $\triangle XYZ$ is
 a _____ with a scale factor of _____.
 Therefore the triangles are _____.

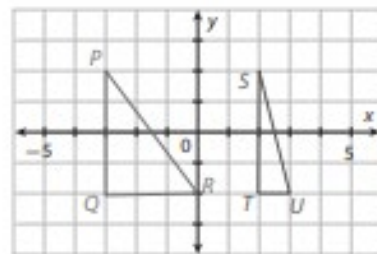


For Problems 1-4, determine if the figures are similar. If they are, describe (in words) the sequence of transformations that maps one figure to the other.

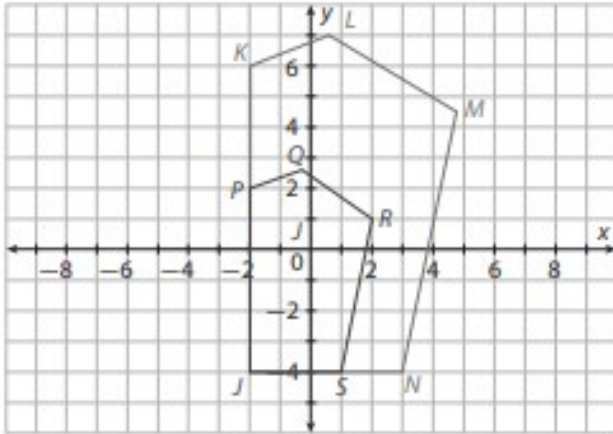
1. $EFGH$ and $ABCD$



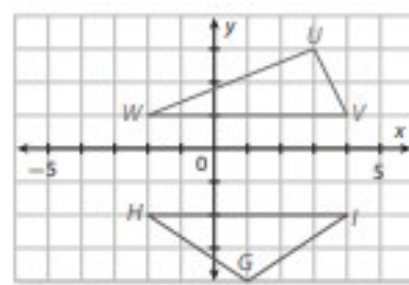
2. $\triangle PQR$ and $\triangle STU$



3. $JKLMN$ and $JPQRS$

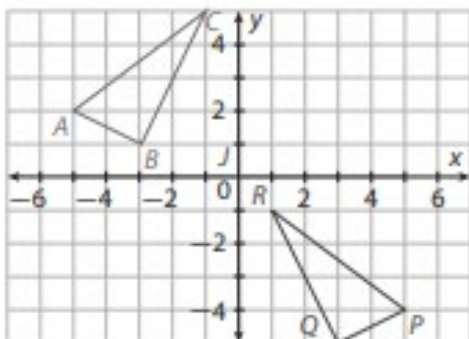


4. $\triangle UVW$ and $\triangle GHI$

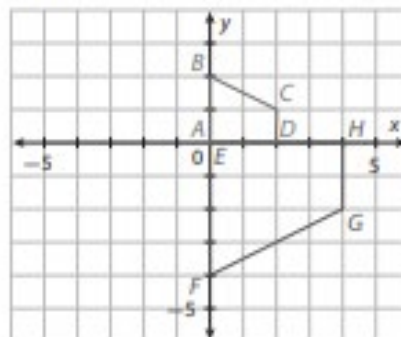


For Problems 5-8, show that the figures are similar by writing the coordinate notation for the sequence of transformations that maps one figure to the other.

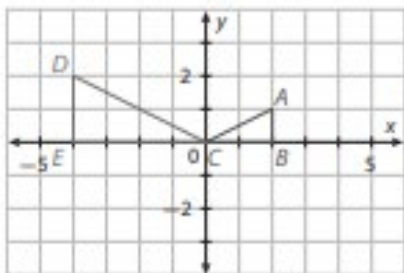
5. Map $\triangle ABC$ to $\triangle PQR$.



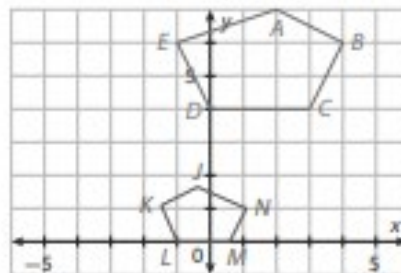
6. Map $ABCD$ to $EFGH$.



7. Map $\triangle CED$ to $\triangle CBA$.



8. Map $ABCDE$ to $JKLMN$.



18. Which of the following is a dilation?

- A. $(x, y) \rightarrow (x, 3y)$
- B. $(x, y) \rightarrow (3x, -y)$
- C. $(x, y) \rightarrow (3x, 3y)$
- D. $(x, y) \rightarrow (x, y - 3)$
- E. $(x, y) \rightarrow (x - 3, y - 3)$

19. What is not preserved under dilation? Select all that apply.

- A. Angle measure
- B. Betweenness
- C. Collinearity
- D. Distance
- E. Proportionality