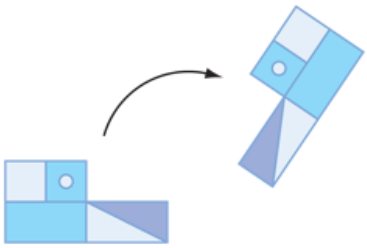
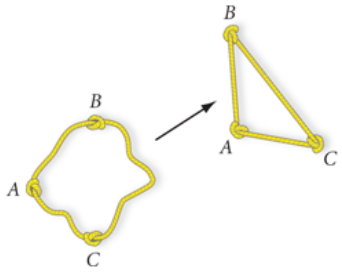
1.9 worksheet : Transformations Name: _____

In exercises 1-3, say whether the transformations are rigid or non-rigid. Explain how you know.

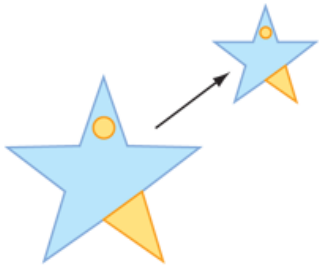
1.



2.



3.

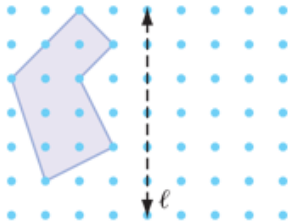


4. An ice-skate gliding in one direction creates several translation transformations. Give another real-world example of translation.

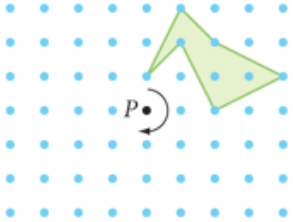
5. An ice skater twirling about a point creates several rotation transformations. Give another real-world example of rotation.

In Exercises 6–8, copy the figure onto graph or square dot paper and perform each transformation.

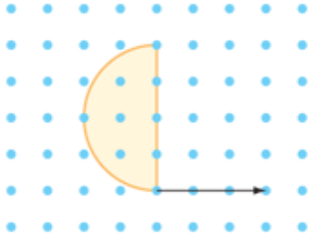
6. Reflect the figure across the line of reflection, line ℓ.



7. Rotate the figure 180° about the center of rotation, point P.



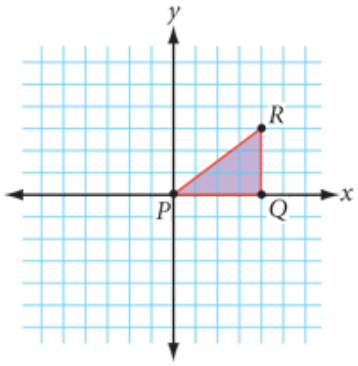
8. Translate the figure by the translation vector.



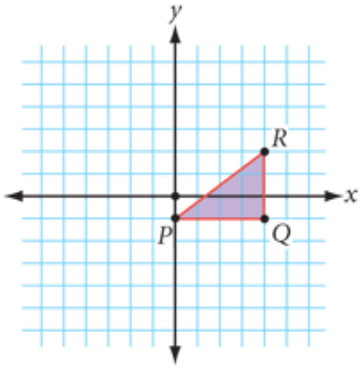
1.9 worksheet : Transformations Name: _____

For Exercises 9–14 transform each $\triangle PQR$ on the coordinate plane by the given rule.

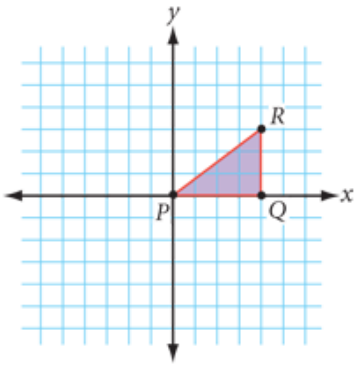
9. Translate 3 units left, 2 units up.



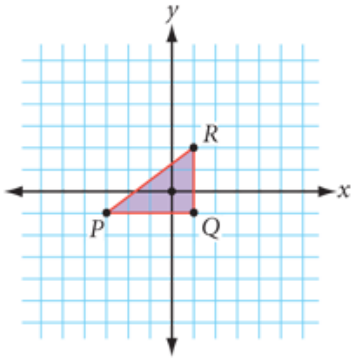
10. Translate 1 unit left, 4 units down.



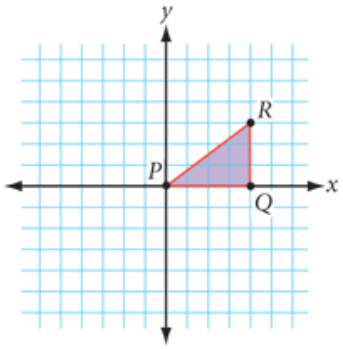
11. Reflect across x-axis



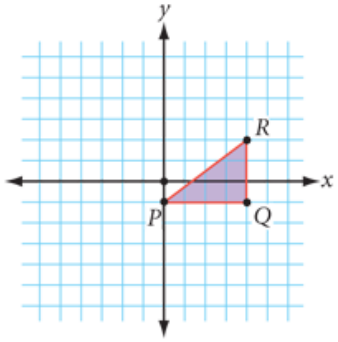
12. Reflect across the y-axis



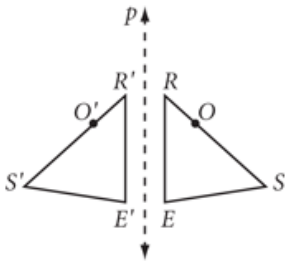
13. Rotate 90° clockwise about the origin.



14. Rotate 90° counterclockwise about the origin.



21. $\triangle RSE$ with O, a random point on $\overline{RS}$, are reflected across line p to create $\triangle R'S'E'$. Which of the following statements are true? Explain how you know.



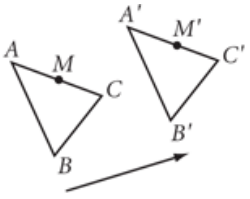
a. $\overline{RE} \cong \overline{R'E'}$

b. $\angle S \cong \angle S'$

c. Points R', O', and S' are collinear

d. The distance from S to line p is equal to the distance from S' to line p.

22. $\triangle ABC$ with M, the midpoint of $\overline{AC}$, are translated to create $\triangle A'B'C'$. Which of the following statements are true? Explain how you know.



a. $\overline{AB} \cong \overline{A'B'}$

b. $\angle C \cong \angle C'$

c. M' is the midpoint of $A'C'$

d. $\overline{BB'} \cong \overline{MM'}$