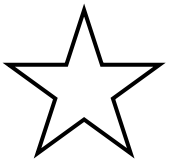
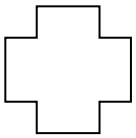
Unit 1 Transformations Review Name: _____ Block: __

Describe any rotations (of 180° or less) that will map each figure onto itself.

1. 

2. 

3. 

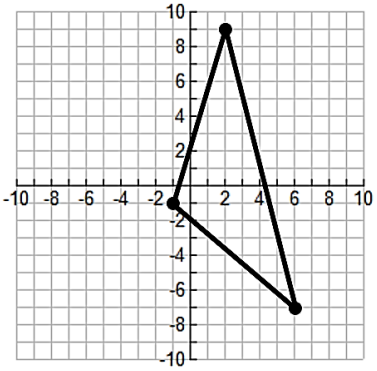
4. How many lines of symmetry does a square have?

5. How many lines of symmetry does a rectangle have?

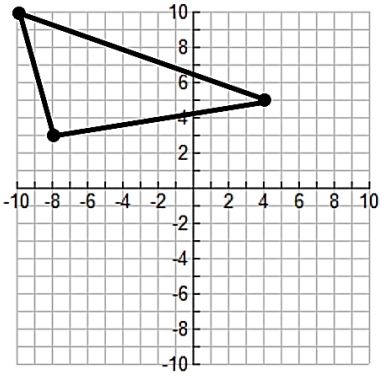
6. What geometric figure has an infinite number of lines of symmetry?

Draw the image of each figure, using the given transformation.

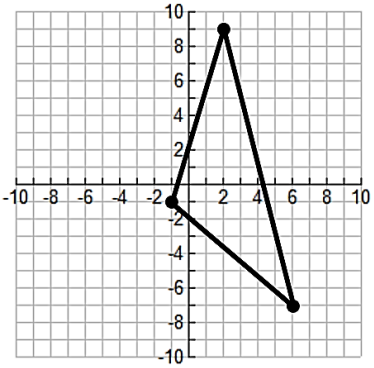
7. Translation (x, y) → (x – 8, y – 3)



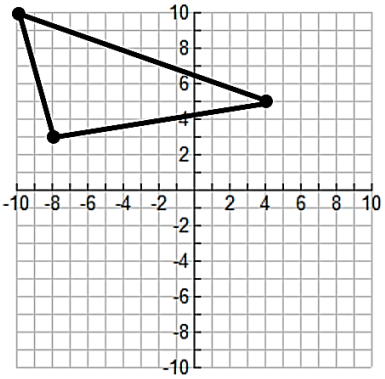
8. Reflection across the x-axis.



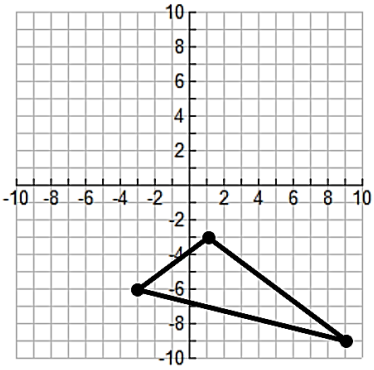
9. Reflection across the line x = -2



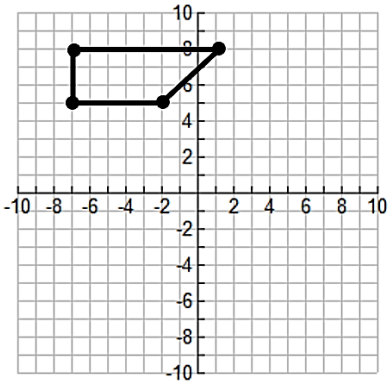
10. Reflection across the y-axis.



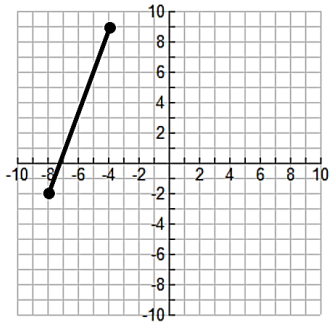
11. Rotation 180° about the origin



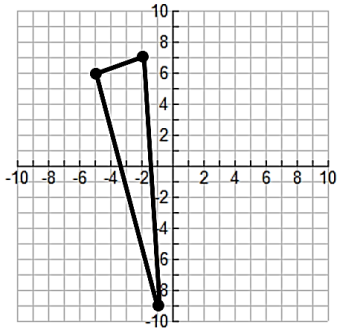
12. Rotation 90° clockwise about the origin.



13. Translation (x, y) → (x + 9, y – 8) Rotation 180° about the origin.

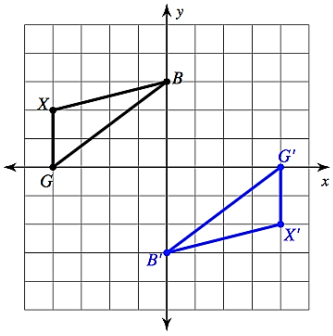


14. Rotation 90° CCW about the origin Reflection about the line y = x.

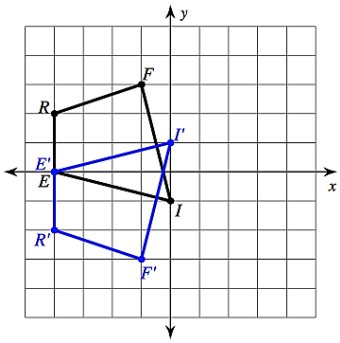


Write a rule to describe each transformation.

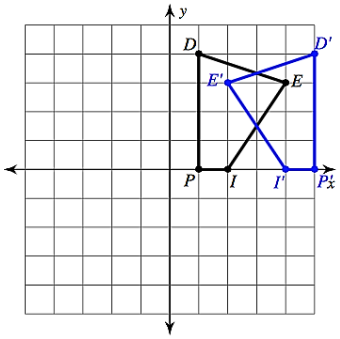
15.



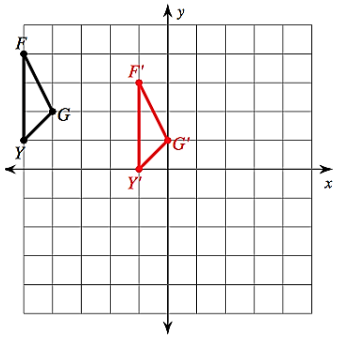
16.



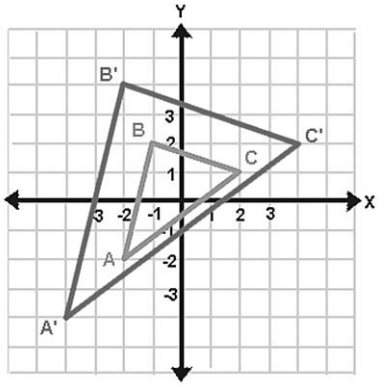
17.



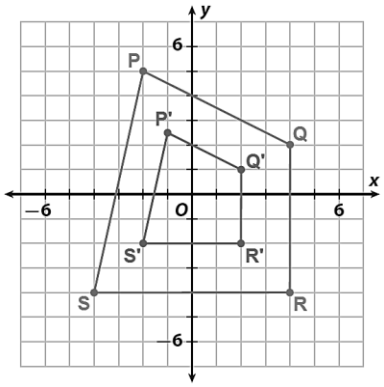
18.



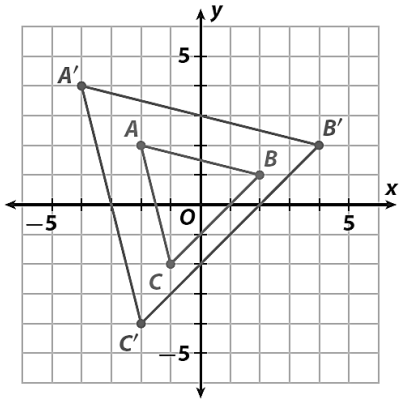
19.



20.



21.



22. Apply the dilatation to triangle GHJ. Name the new points and state the scale factor.

$D(x, y) \rightarrow (1.5x, 1.5y)$

$G(1, -2) \rightarrow G'$(____, ____)
$H(1, -4) \rightarrow H'$(____, ____)
$J(4, -2) \rightarrow J'$(____, ____)

Scale factor: _____

23. Apply the dilatation to triangle LMN. Name the new points and state the scale factor.

$$D(x, y) \rightarrow \left(\frac{1}{3}x, \frac{1}{3}y\right)$$

L(-3, 3)→ L'(____, ____)
M(3, 6) → M'(____, ____)
N(3, -3) → N'(____, ____)

Scale factor: _____

24. What translation moves the point Q (–4, –3) to (9, 10)?

25. Using the form $T_{h,k}(x, y) = (x + h, y + k)$, how can we describe a translation that moves a point right 3 and down two units?

26. What are the coordinates of $R_{90}(R_{270}(x, y))$ if $(x, y) = (4,5)$?

27. The point S $(x, y) = (–x, y)$. What transformation is S?

28. An isometric transformation occurs when the preimage and image are _____.

29. Which transformations are isometric?