

Name: _____

Date: _____


Ms. Streffacio

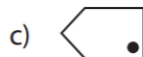
Class: _____


I can:

Do Now (3 minutes to complete):


Choose the correct image which shows the transformation of each figure.

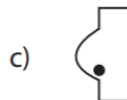
1) Reflection of  ?




2) Translation of  ?



3) Rotation of  ?



4) Reflection of  ?



Teacher Model (10 minutes) You Watch, Listen, Copy:

a) Rotate 90° Clockwise

A: _____ A': _____

B: _____ B': _____

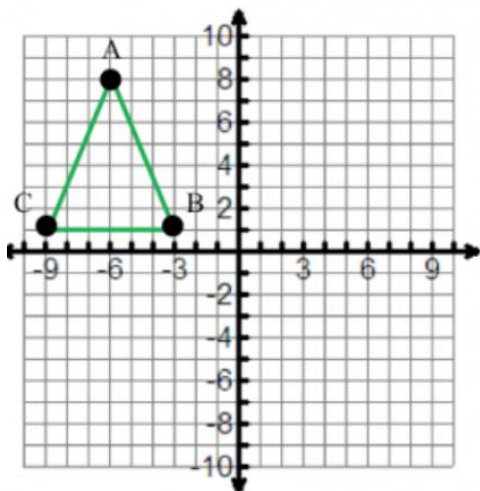
C: _____ C': _____

b) Reflect on x axis

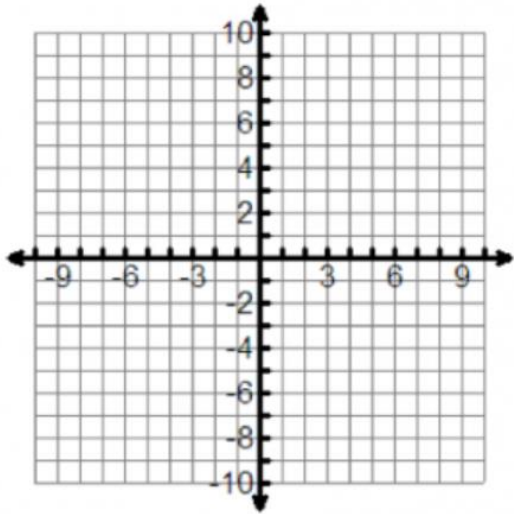
A': _____ A'': _____

B': _____ B'': _____

C': _____ C'': _____



2. Plot triangle ABC then complete the transformations.



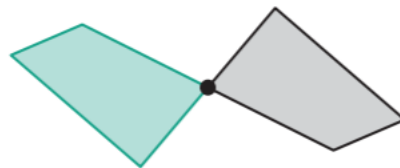
- a) Translate $\langle -1, 5 \rangle$ Translate 1 unit to the left, 5 units up
- A: $_(8, -6)_$ A': _____
- B: $_(1, -3)_$ B': _____
- C: $_(1, -9)_$ C': _____

b) Rotate 180° Counterclockwise

- A': _____ A'': _____
- B': _____ B'': _____
- C': _____ C'': _____

Check for Understanding- Did you understand the Model? (2 minutes) Teacher will check!

The gray figure is a transformation of the green figure. Identify the transformation and describe one way in which you could compare the properties of the lines and the angles in the original figure and its image.

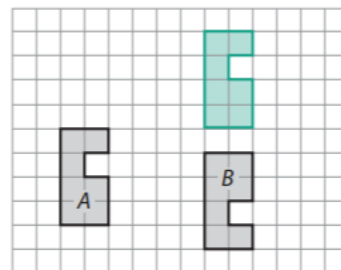


We Do

Together (10 minutes):

Consider the three figures on the grid.

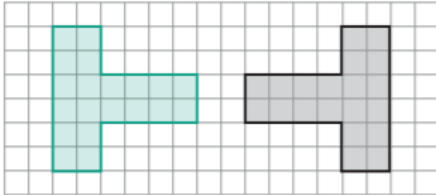
- a. How was the green figure transformed to get image A?



- b. How was the green figure transformed to get image B?

Final Check for Understanding before I send you to Independent Practice! Teacher will Check (4 minutes):

Jarrold says that the gray figure is a rotation of the green figure. Imani says it is a reflection. Who is correct? Explain your reasoning. Draw any lines of reflection or centers of rotation on the grid.



Transformation Rules (Memorize these)

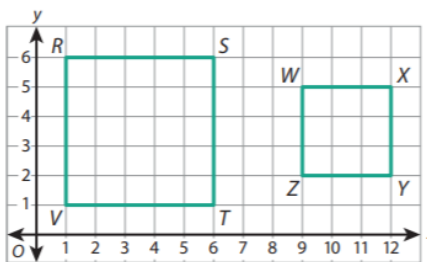
Table 1 Transformation geometry rules

Transformation	Rule
Reflection	
About the x axis	(x, y) becomes $(x, -y)$
About the y axis	(x, y) becomes $(-x, y)$
About $y = x$	(x, y) becomes (y, x)
About $y = -x$	(x, y) becomes $(-y, -x)$
Rotation	
90° about the origin	(x, y) becomes $(-y, x)$
180° about the origin	(x, y) becomes $(-x, -y)$
270° about the origin	(x, y) becomes $(y, -x)$
-90° about the origin	(x, y) becomes $(y, -x)$
Translation	
$T_{ab}(x, y)$	$(x + a, y + b)$

Independent Practice (on your own):

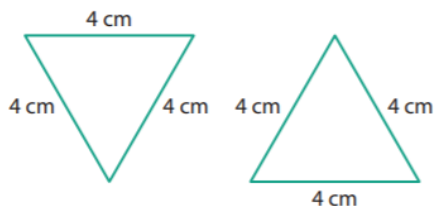
Consider quadrilaterals $RSTV$ and $WXYZ$.

- a. Find the lengths of the sides of each quadrilateral. Explain how you got your answers.



- b. Compare the properties of the figures. What type of quadrilateral is each figure?

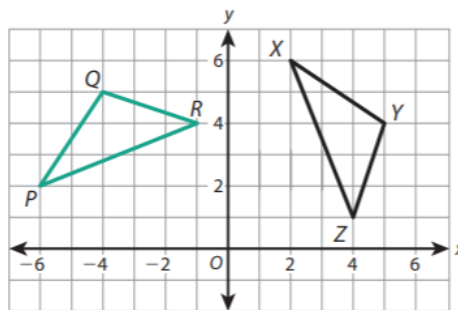
How are the triangles at the right alike? How are they different?



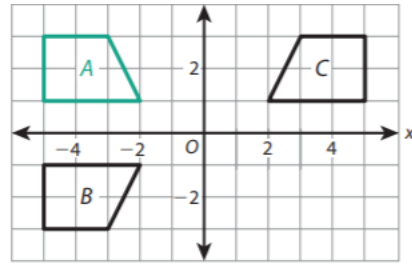
Triangle PQR is rotated 90° clockwise about the origin. The diagram shows the triangle and its image, $\triangle XYZ$. Complete the congruence statements.

$\overline{PQ} \cong$ _____ $\overline{QR} \cong$ _____ $\overline{RP} \cong$ _____

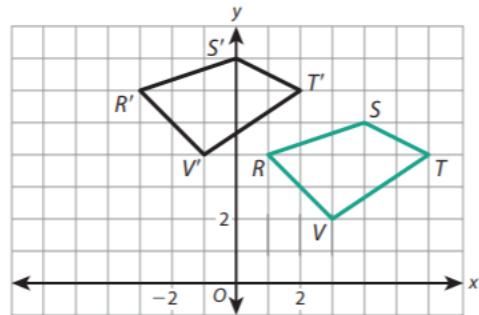
$\angle P \cong$ _____ $\angle Q \cong$ _____ $\angle R \cong$ _____



Polygon B is a reflection of polygon A across the x -axis. Polygon C is a rotation of polygon B about the origin. Is polygon C congruent to polygon A ? Explain why or why not.



Describe the transformation that maps Polygon $RSTV$ to Polygon $R'S'T'V'$.



Write the coordinates of the vertices of the original polygon and its image. Then compare the corresponding vertices in the original polygon and its image.

R (____) S (____) T (____) V (____)

R' (____) S' (____) T' (____) V' (____)

The coordinates of the vertices of $\triangle XYZ$ and its image after a transformation are shown below.

$\triangle XYZ$: $X(3, 4), Y(3, 1), Z(1, 1)$

$\triangle X'Y'Z'$: $X'(-3, 4), Y'(-3, 1), Z'(-1, 1)$

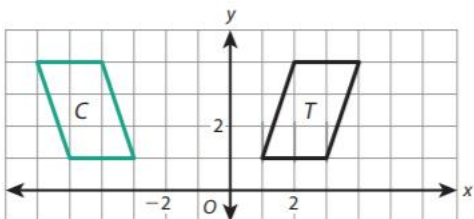
- a. Describe the difference in the x-values and the y-values of the corresponding vertices. What transformation produced $\triangle X'Y'Z'$?

- b. Then use this information to find the coordinates of the vertices of $\triangle P'Q'R'$ after the same transformation of $\triangle PQR$.

$\triangle PQR$: $P(-5, 3), Q(-1, 2), R(-2, -2)$

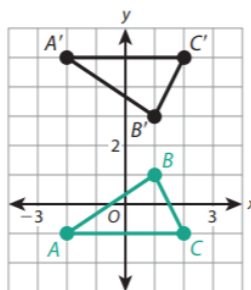
$\triangle P'Q'R'$: $P'(\text{ }), Y'(\text{ }), Z'(\text{ })$

Mica translated Polygon C two units to the right and then reflected the image across the y-axis to get Polygon T. Sasha used one transformation to transform Polygon C to Polygon T. Describe the transformation that Sasha used.



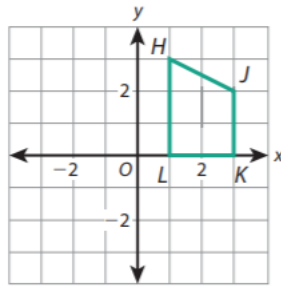
Triangle ABC and its image are shown.

- a. What type of transformation was used to transform $\triangle ABC$ to $\triangle A'B'C'$?



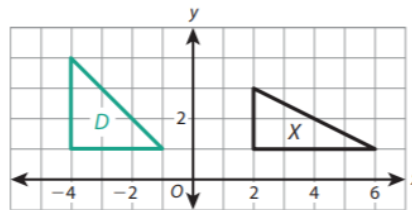
- b. Is $\triangle A'B'C'$ congruent to $\triangle ABC$? Explain why or why not.

Rotate Polygon $HJKL$ 180° about the origin, reflect it across the y -axis, and then reflect it across the x -axis. Write the coordinates of the vertices of the image Polygon $H'J'K'L'$. How do the vertices of Polygon $H'J'K'L'$ compare to the corresponding vertices of Polygon $HJKL$?



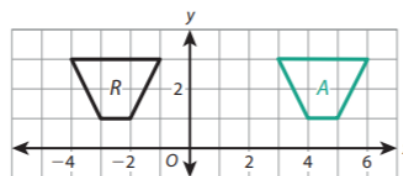
Consider Triangle D and Triangle X .

- a. Is Triangle X the result of a reflection, translation, or rotation of Triangle D ? Explain how you know.



- b. Are the triangles congruent? Explain why or why not.

Polygon A was translated 7 units to the left to form Polygon R . Name another way to transform Polygon A to form Polygon R .



Triangle PQR is shown at the right.

- a. Reflect $\triangle PQR$ across the y -axis and then dilate it about center O with a scale factor of 2. Sketch the final image.
- b. Compare the coordinates of the corresponding vertices of the final image and $\triangle PQR$.

