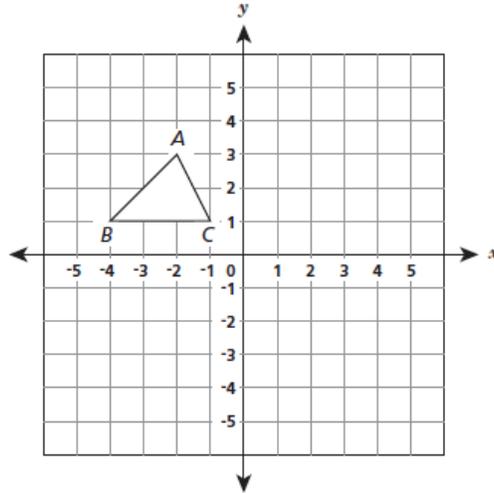


Name: _____
8.G.3

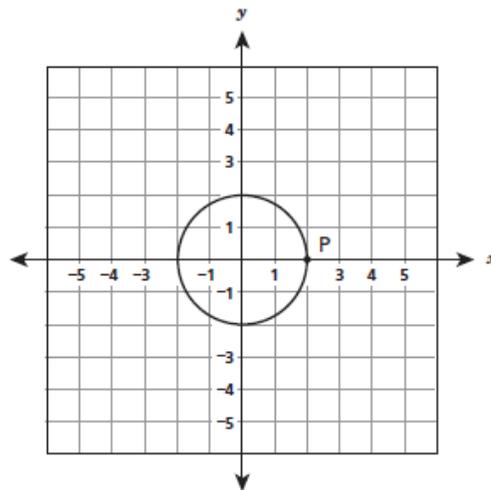
Date: _____

- _____1. If $\triangle ABC$ is rotated 90° clockwise about the origin, what will be the new coordinates of vertex B ? (2013)



- A. $(-1, -4)$ B. $(1, 4)$ C. $(4, 1)$ D. $(4, -1)$

- _____2. The circle shown below is centered at $(0, 0)$ and passes through point P located at $(2, 0)$. (2014)



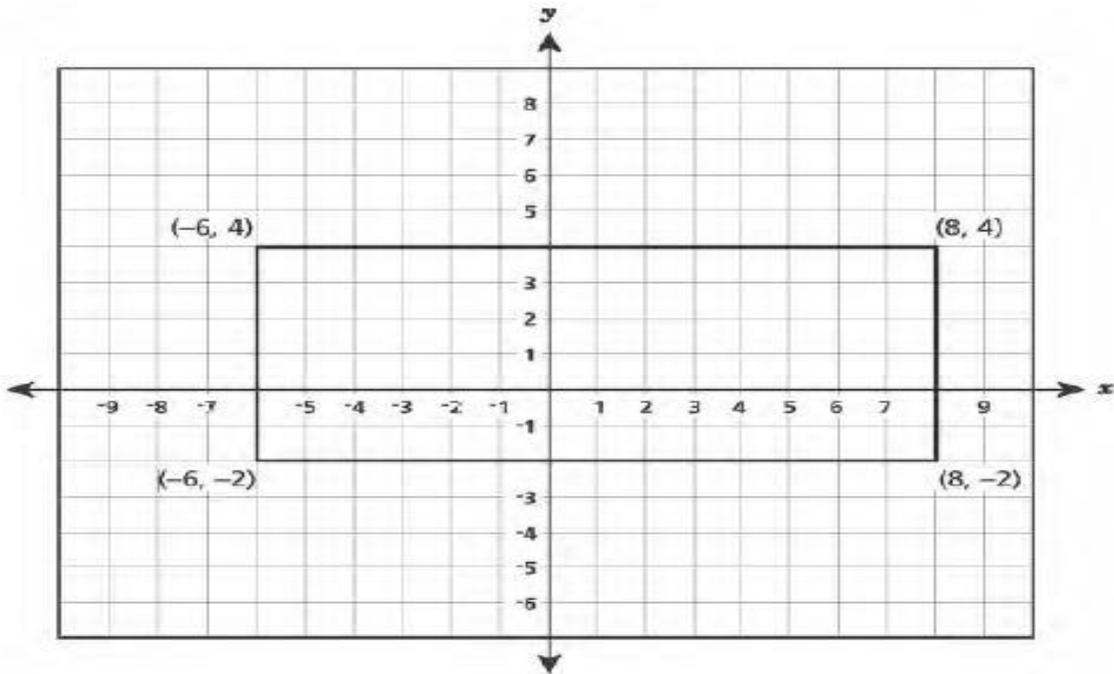
The circle is dilated with the center of dilation at the origin and a scale factor of 0.5 and then translated up 3 units. What are the coordinates of the image of point P after this transformation?

- A. $(4, 3)$ B. $(1, 3)$ C. $(1, 1.5)$ D. $(0.5, 3)$

- _____3. A solid object was sliced to form two new objects. Each of the two new objects had a circular base. Which shape could **not** have been the original object? (2015)

- A. cone B. cylinder C. prism D. sphere

4. Mia enlarged a plan for an outdoor stage. The original plan is shown below.



She dilated the outdoor stage by a scale factor of four with the center of dilation at the origin. Which ordered pair will be the coordinates of one of the new vertices? (2016)

- A. $(2, 1)$ B. $(8, 16)$ C. $(32, 4)$ D. $(32, 16)$

5. A parallelogram with vertices at $(0, 3)$, $(2, 0)$, $(4, 2)$, and $(2, 5)$ is reflected over the y -axis. Which vertex of the parallelogram will have the same x -coordinate before and after the reflection? (2017) no calculator

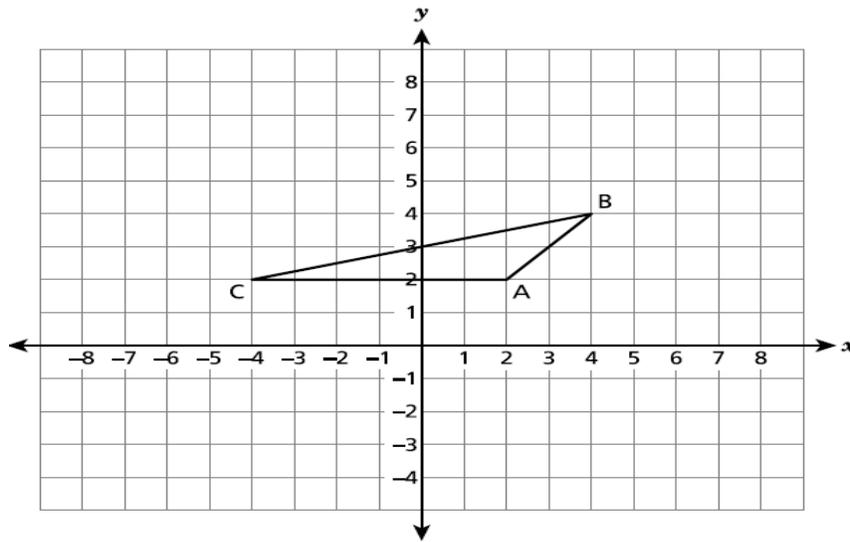
- A. $(0, 3)$ B. $(2, 0)$ C. $(4, 2)$ D. $(2, 5)$

6. On a coordinate plane, vertex A for triangle ABC is located at $(6, 4)$. Triangle ABC is dilated by a scale factor of 0.5 with the center of dilation at the origin. The resulting image is triangle $A'B'C'$. What are the coordinates of vertex A' ? (2018)

- A. $(3, 2)$ B. $(12, 8)$ C. $(5.5, 3.5)$ D. $(6.5, 4.5)$

7. Triangle ABC is graphed on a coordinate plane, as shown below.

(2019)



Triangle ABC is dilated by a scale factor of 2 with a center of dilation at the origin to create $\triangle A'B'C'$. What are the coordinates of the vertices of $\triangle A'B'C'$?

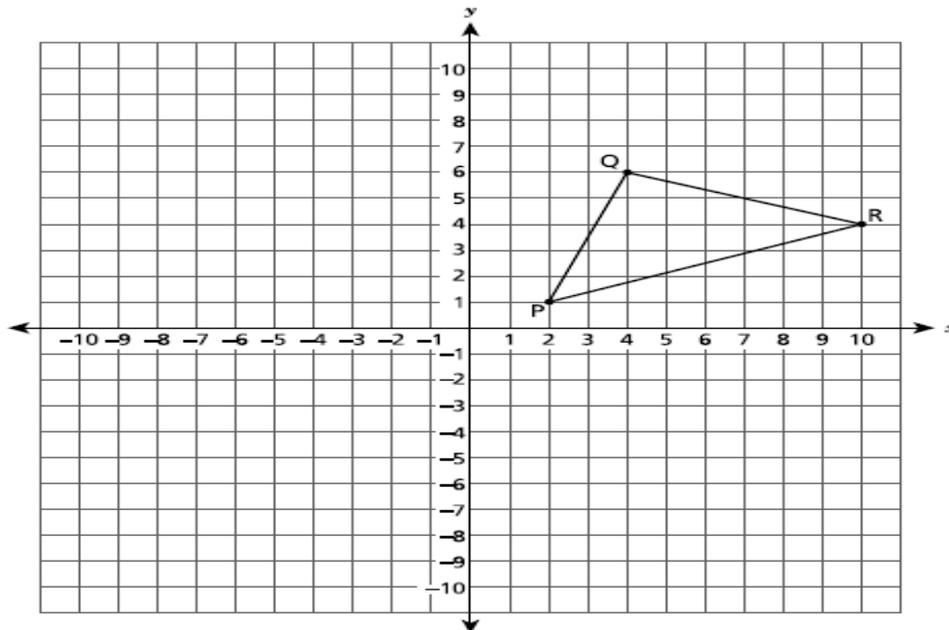
A. (1, 1), (2, 2), (-2, 1)

C. (4, 4), (6, 6), (-2, 4)

B. (4, 2), (8, 6), (-8, 2)

D. (4, 4), (8, 8), (-8, 4)

8. Triangle QPR is graphed on the coordinate plane below.



Triangle is dilated by a scale factor of $\frac{1}{2}$ with a center of dilation at the origin, resulting in triangle $Q'P'R'$. What are the coordinates of vertex R' ?

(2022)

A. (2, 5)

B. (5, 2)

C. (8, 20)

D. (20, 8)

9. A triangle with vertices at $A(-1, 1)$, $B(-2, 1)$, and $C(-1, 4)$ is translated. The image of vertex A has coordinates at $(3, -1)$.

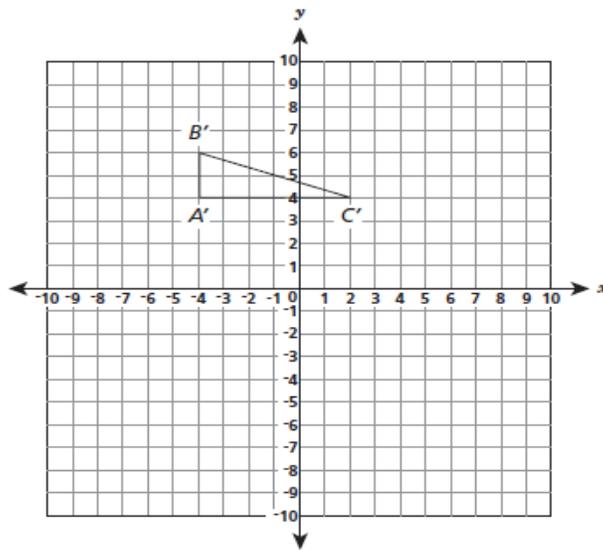
Determine the coordinates of either the image of vertex B or the image of vertex C . (2016)

Show your work.

Answer _____

10. When $\triangle ABC$ was dilated by a scale factor of 2, centered at the origin, the result was its image $\triangle A'B'C'$ shown on the coordinate plane below. The vertices of $\triangle A'B'C'$ are $A'(-4, 4)$, $B'(-4, 6)$, and $C'(2, 4)$.

(2015)



What are the coordinates of the vertices of $\triangle ABC$?

Vertices A (____ , ____) B (____ , ____) C (____ , ____)

Explain how you determined the coordinates of the vertices of $\triangle ABC$.

Are $\triangle ABC$ and $\triangle A'B'C'$ congruent to each other, similar to each other, or neither?

Explain how you determined your answer

11. Square ABCD is located on a coordinate plane. The coordinates for three of the vertices are listed below. (2018)

A (2, 7)

C (8, 1)

D (2, 1)

Square ABCD is dilated by a scale factor of 2 with the center of dilation at the origin, to form square $A'B'C'D'$. What are the coordinates of vertex B' ?

Explain how you determined your answer.

12. Triangle ABC goes through a series of three transformations, resulting in triangle A'B'C'.
The three transformations are listed below. (2019)

- a 180° rotation clockwise about the origin
- a reflection over the x axis
- a reflection over the y axis

Triangle ABC has vertex A located at (2, -3). Using the coordinates of this point, explain how the three transformations map vertex A onto vertex A'.

Explain your answer.
