

- 1 The coordinates of the endpoints of \overline{ST} and its image $\overline{S'T'}$ are given below.

$$\begin{array}{ll} S(2, -4) & S'(-2, -4) \\ T(-1, 1) & T'(1, 1) \end{array}$$

Which of the following single transformations maps \overline{ST} to $\overline{S'T'}$?

- A. translation 4 units to the left
- B. rotation 180° clockwise about the origin
- C. reflection over the x -axis
- D. reflection over the y -axis

- 2 Point H is located at $(-3, 5)$ on a coordinate grid. Point H is then reflected over the y -axis.

What are the coordinates of the image of point H ?

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

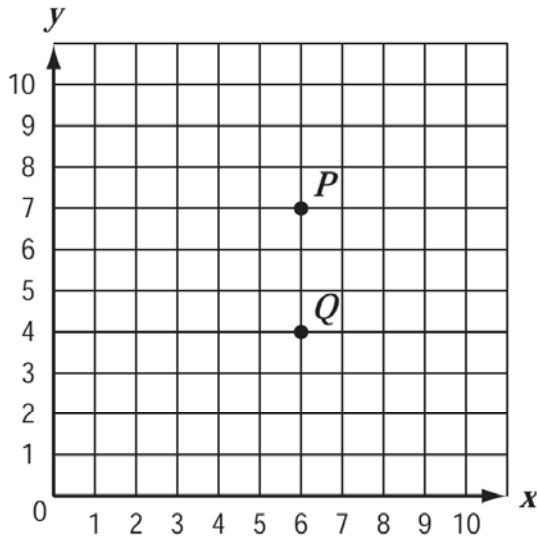
Mark your answer here: 1. A B C D

Mark your answer here: 2. A B C D



- 3 Point $P(6, 7)$ and point $Q(6, 4)$ are plotted on the coordinate grid below.

Mark your answer here: 3. (A)(B)(C)(D)



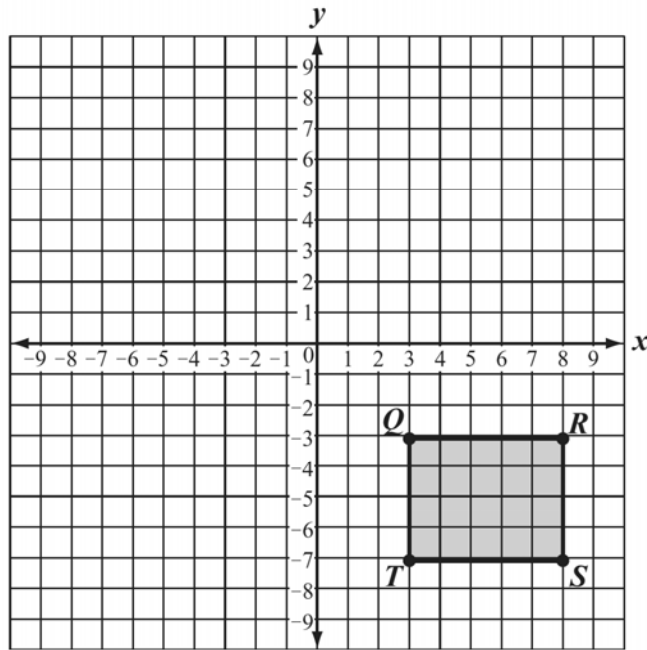
Point P is rotated 180° clockwise about point Q . What are the coordinates of the image of point P after this rotation?

- A. (3, 4)
- B. (6, 1)
- C. (6, 10)
- D. (9, 4)



Directions: For the problem below, use a separate piece of paper to write your answers. Your teacher will not count anything you write on this page.

4 Rectangle $QRST$ is shown on the coordinate grid below.



- a. If rectangle $QRST$ is translated so that the image of point S is the point located at $(-3, -6)$, what are the coordinates of the image of point Q ? Show or explain how you got your answer.

On the grid in your Student Answer Booklet, copy the x -axis, the y -axis, and rectangle $QRST$ shown above. Be sure to label points Q , R , S , and T .

- b. Rectangle $Q'R'S'T'$ is the reflection of rectangle $QRST$ over the x -axis. On your grid, draw rectangle $Q'R'S'T'$. Be sure to label points Q' , R' , S' , and T' .
- c. Rectangle $Q''R''S''T''$ is the reflection of rectangle $Q'R'S'T'$ over the y -axis. On your grid, draw rectangle $Q''R''S''T''$. Be sure to label points Q'' , R'' , S'' , and T'' .
- d. As shown from parts (b) and (c), rectangle $Q''R''S''T''$ is the result of two reflections of rectangle $QRST$. It is also the result of one rotation of rectangle $QRST$. What is the angle of rotation? Show or explain how you got your answer.

