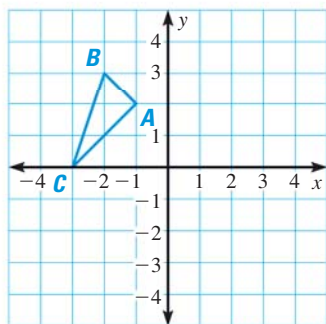


TRANSFORMATION PROBLEMS ON TAKS

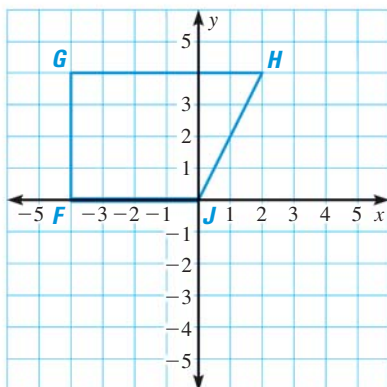
Below are examples of transformation problems in multiple choice format. Try solving the problems before looking at the solutions. (Cover the solutions with a piece of paper.) Then check your solutions against the ones given.

1. If $\triangle ABC$ is translated 3 units to the right and 2 units down, what are the coordinates of A' ?



- A (-4, 4)
- B (1, 2)
- C (2, 0)
- D (2, 4)

2. Quadrilateral $FGHJ$ is dilated by a scale factor of $\frac{1}{4}$. What are the coordinates of H' ?



- F (-2, 4)
- G (-1, 4)
- H (0.5, 1)
- J (1, 2)

Solution

The transformation $(x, y) \rightarrow (x + 3, y - 2)$ translates a figure 3 units to the right and 2 units down.

The point A has coordinates $(-1, 2)$, so the coordinates of A' are:

$$(-1, 2) \rightarrow (-1 + 3, 2 - 2) = (2, 0)$$

The correct answer is C.

- A
- B
- C
- D

Solution

The transformation $(x, y) \rightarrow \left(\frac{1}{4}x, \frac{1}{4}y\right)$ dilates a figure by a scale factor of $\frac{1}{4}$.

The point H has coordinates $(2, 4)$, so the coordinates of H' are:

$$(2, 4) \rightarrow \left(\frac{1}{4} \cdot 2, \frac{1}{4} \cdot 4\right) = (0.5, 1)$$

The correct answer is H.

- F
- G
- H
- J