Transformations Quiz BI

Multiple Choice
Identify the choice that best completes the statement or answers the question.

1. Translate 2 units right and 5 units up.

   a. \( L'(-3, 3), M'(1, 2), N'(0, 0), P'(-2, 0) \)
   b. \( L'(0, 0), M'(4, -1), N'(3, -3), P'(1, -3) \)
   c. \( L'(-7, 3), M'(-3, 2), N'(-4, 0), P'(-6, 0) \)
   d. \( L'(-3, -7), M'(1, -8), N'(0, -10), P'(-2, -10) \)

2. Translate 4 units left and 3 units down.

   - \( R'(6, -2), T'(7, 2), V'(9, -2) \)
   - \( R'(-2, 4), T'(-1, 8), V'(1, 4) \)
   - \( R'(-1, -3), T'(0, 1), V'(2, -3) \)
   - \( R'(-2, -2), T'(-1, 2), V'(1, -2) \)

3. Rotate 90° clockwise about the origin.

   a. \( F'(6, -2), G'(6, -5), H'(1, -4), J'(1, -1) \)
   b. \( F'(-6, -2), G'(-6, -5), H'(-1, -4), J'(-1, -1) \)
   c. \( F'(-6, 2), G'(-6, 5), H'(-1, 4), J'(-1, 1) \)
   d. \( F'(-2, -6), G'(-5, -6), H'(-4, -1), J'(-1, -1) \)
4. Rotate 90° counterclockwise about the origin.

Find the coordinates of the figure after reflecting in the x-axis.

6. $D(4, 4), E(6, 4), F(0, 6)$
   a. $D'(4, 6), E'(6, 4), F'(0, 6)$
   b. $D'(4, -4), E'(6, -4), F'(0, -6)$
   c. $D'(-4, -4), E'(-6, -4), F'(-0, -6)$
   d. $D'(4, 4), E'(6, 4), F'(0, 6)$

Find the coordinates of the figure after reflecting in the y-axis.

7. $H(-1, 5), J(0, 1), K(-5, 4)$
   a. $H'(1, -5), J'(0, -1), K'(5, -4)$
   b. $H'(-1, -5), J'(0, -1), K'(5, -4)$
   c. $H'(1, 5), J'(0, -1), K'(5, 4)$
   d. $H'(-1, 5), J'(0, 1), K'(-5, 4)$

A figure lies entirely in Quadrant II. In which quadrant will the figure lie after the given clockwise rotation about the origin?

8. $180^\circ$
   a. Quadrant III
   b. Quadrant II
   c. Quadrant I
   d. Quadrant IV

9. $270^\circ$
   a. Quadrant II
   b. Quadrant III
   c. Quadrant I
   d. Quadrant IV

10. $360^\circ$
    a. Quadrant III
    b. Quadrant I
    c. Quadrant IV
    d. Quadrant II

11. $90^\circ$
    a. Quadrant II
    b. Quadrant III
    c. Quadrant I
    d. Quadrant IV
1. The vertices of a rectangle are \( W(2, 2) \), \( X(4, 3) \), \( Y(5, 2) \), and \( Z(4, 1) \). Reflect the figure in the \( y \)-axis, and then translate the image 3 units right and 4 units down. What are the coordinates of the image?

Tell whether the shaded figure is a translation, reflection, or rotation of the nonshaded figure.

2.

3.

4.

5. Rotate the triangle 180° about the origin, and then translate the triangle 3 units right and 2 units up. Find the coordinates of the image.

![Graph showing a triangle with labeled points A, B, and C.]

Describe the translation of the point to its image.

6. \((8, -7) \rightarrow (-2, -2)\)

7. \((4, 3) \rightarrow (-5, 4)\)

Describe the translation from the shaded figure to the unshaded figure.

8. [Graph showing a shaded triangle and an unshaded triangle with labeled points.]
9. A polygon lies entirely in Quadrant IV. In which quadrant will the image lie after a reflection in the x-axis?

10. A polygon lies entirely in Quadrant II. In which quadrant will the image lie after a reflection in the y-axis?

The coordinates of a point and its image are given. Is the reflection in the x-axis or y-axis?

11. (2, -7) → (2, 7)

12. (-5, 8) → (5, 8)

13. The ordered pair of a point is (x, y). Find the coordinates of the point after the given transformation.
   a. a reflection in the x-axis
   b. a reflection in the y-axis

14. Why is it not necessary to use the words clockwise and counterclockwise when describing a rotation of 180°?

Extended Response

1. Extended Response A flock of birds translates from point G to point A.

   ![Diagram of Florida with birds](image)

   a. Describe the translation of the flock of birds.
   b. Can a boat make a similar translation? Explain.
   c. Describe a series of translations a boat could make to get to point A from point G.