

Worksheet 4.4 Geometric transformations

1. Which transformation that takes place when all points on a plane are moved in the same direction through the same distance?

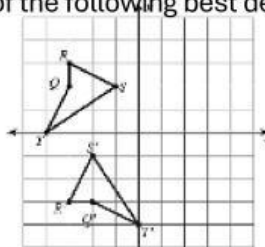
- a. translation b. rotation c. reflection d. dilation

2. Which transformation that takes place when all points in a plane are flipped over in the same plane in a line?

- a. translation b. rotation c. reflection d. dilation

3. An image on the right undergoes rotation, which of the following best describes the rule?

- a. 90° clockwise rotation about the origin
b. 90° counterclockwise about the origin
c. 180° about the origin
d. both a and b



4. Given Pt. A $(-1, -1)$ is being translated 3 units left, and 2 units down. What are the coordinates of the new image?

- a. $(-3, -1)$ b. $(3, 2)$ c. $(-4, -3)$ d. $(2, 1)$

5. Pt. X undergoes 90° clockwise rotation about the origin. Which of the following is not true?

- a. The center of rotation is $(0, 0)$. b. The rotation is the same as the hands of the clock.
c. The angle of rotation is a right angle. d. The mirror line is along with the x-axis

6. A transformation in which the image is turn.

- a. rotation b. reflection c. translation d. dilation

7. A type of reflection in which the image is flipped over the y-axis is called _____ reflection.

- a. horizontal b. diagonal c. vertical d. clockwise

8. Which of the following statements is/are true about transformation?

- i. A transformation is a change in size, shape or direction.
ii. When an image is rotated as the same direction of the hands of a clock is called anti clockwise rotation.
iii. An image is reflected with a mirror line.
iv. An image is translated under a vector.

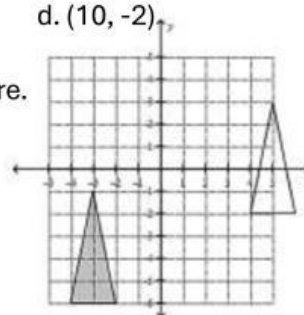
- a. i, ii, iii, iv b. i only c. i, iii, iv d. i and ii

9. Given Pt. M with coordinates $(-2, 10)$ under a rotation of 180° about the origin, what are the coordinates of M'?

- a. $(10, 2)$ b. $(2, -10)$ c. $(-10, 2)$ d. $(10, -2)$

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

- a. translate 6 units right and 4 units up
b. translate 4 units right and 2 units down
c. translate 8 units right and 4 units up
d. translate 6 units right and 2 units down

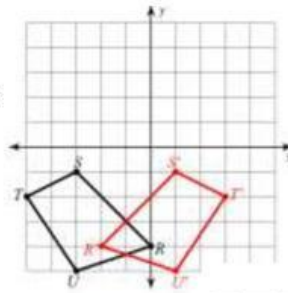


11. What is the name of the new figure formed by a transformation?

- a. transformed b. pre-image c. image d. transformer

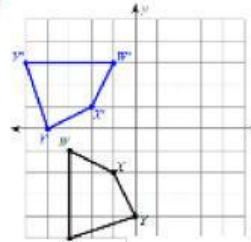
12. What is the rule for the following reflection?

- a. reflection across x – axis
- b. reflection across y – axis
- c. reflection across $y = -4$
- d. reflection across $x = -1$



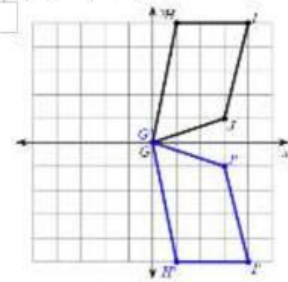
13. Which of the following describe the transformation below?

- a. Rotation 90° clockwise about the origin
- b. Translation 2 units right and 4 units up
- c. Reflection across $x = 1$
- d. Rotation 180° about the origin



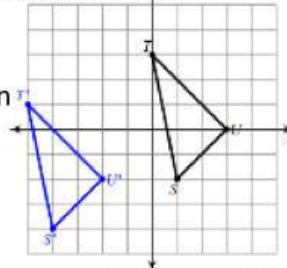
14. Which of the following describe the transformation below?

- a. Rotation 180° about the origin
- b. Rotation 90° counterclockwise about the origin
- c. Reflection across $y = 2$
- d. Reflection across the x-axis



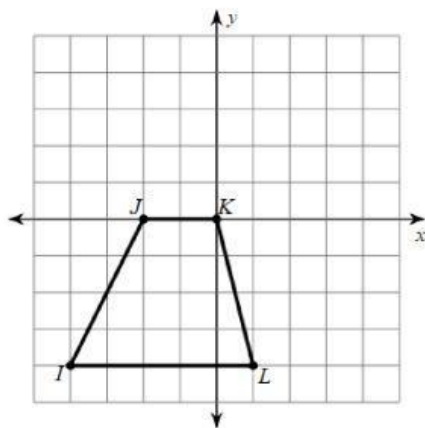
15. Which of the following describe the transformation below?

- a. Reflection across $x = 1$
- b. Reflection across the x-axis
- c. Translation 5 units left and 2 units down
- d. Rotation 180° about the origin



For items 16 – 18, graph the image and write the coordinates of pre – image and the new image after transformation.

16. translation: 4 units right and 2 units up



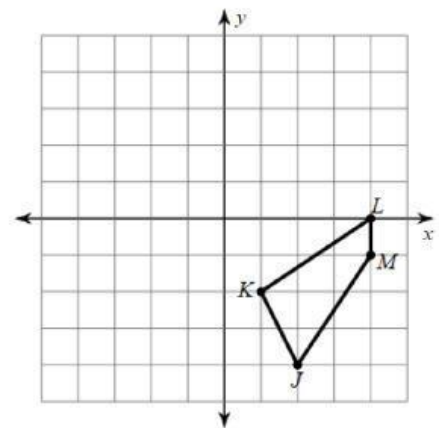
$J(-2, 0) \rightarrow J'(_, _)$

$K(0, 0) \rightarrow K'(_, _)$

$L(1, -4) \rightarrow L'(_, _)$

$I(-4, -4) \rightarrow I'(_, _)$

17. rotation 90° clockwise about the



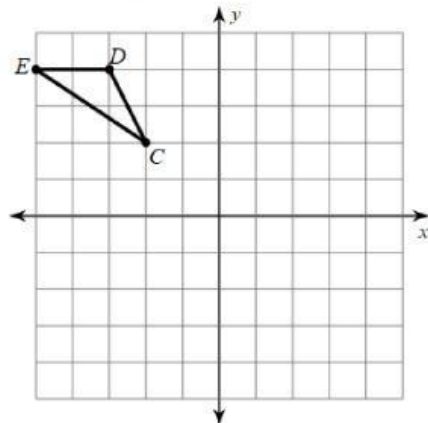
$K(1, -2) \rightarrow K'(_, _)$

$L(4, 0) \rightarrow L'(_, _)$

$M(4, -1) \rightarrow M'(_, _)$

$J(2, -4) \rightarrow J'(_, _)$

18. reflection across the y-axis



$$C (-2, 2) \rightarrow C' (_, _)$$

$$D (-3, 4) \rightarrow D' (_, _)$$

$$E (-5, 4) \rightarrow E' (_, _)$$