

Unit 1: Rigid Transformations and Congruence

CONCEPT

Name: _____ Date: _____

Solve each problem and write your short answer (a number, a coordinate pair, or a word) on the line. Notation: coordinates are (x, y) , degrees use $^\circ$, negatives use a minus sign like -5 .

1. Translate the point $(2, 3)$ by moving it 4 units to the right. What are the coordinates of the image?

Answer: _____

2. Translate the point $(5, 1)$ down 3 units. What are the coordinates of the image?

Answer: _____

3. Reflect the point $(4, 2)$ across the x-axis. What are the coordinates of the image?

Answer: _____

4. Reflect the point $(3, 6)$ across the y-axis. What are the coordinates of the image?

Answer: _____

5. Rotate the point $(2, 0)$ 90° counterclockwise about the origin. What are the coordinates of the image? (Rule: (x, y) becomes $(-y, x)$.)

Answer: _____

6. Rotate the point $(0, 5)$ 180° about the origin. What are the coordinates of the image? (Rule: (x, y) becomes $(-x, -y)$.)

Answer: _____

7. A translation moves the point $(1, 1)$ to $(1, 6)$. How many units up did it move?

Answer: _____

8. Translate the point $(-2, 4)$ by moving it 3 units to the left. What are the coordinates of the image?

Answer: _____

9. A rigid transformation maps a triangle onto another triangle. One side of the original triangle has length 7. What is the length of the matching side of the image?

Answer: _____

10. In a rigid transformation, an angle in the original figure measures 40° . What is the measure of the matching angle in the image?

Answer: _____

11. Reflect the point $(-3, -5)$ across the x-axis. What are the coordinates of the image?

Answer: _____

12. Two figures are related by a rigid transformation (a translation, rotation, or reflection). Are the two figures congruent? Answer yes or no.

Answer: _____