

Unit 1: Rigid Transformations and Congruence

PRACTICE

Name: _____ Date: _____

Solve each problem and give your answer as a coordinate pair, number, or short value. Assume all rotations are about the origin.

1. Point A is at (4, -2). Translate A by the rule $(x, y) \rightarrow (x + 3, y + 5)$. What are the coordinates of the image A'?

Answer: _____

3. Point C is at (3, 8). It is reflected across the y-axis. What are the coordinates of the image C'?

Answer: _____

5. Point E is at (6, -1). It is rotated 90° counterclockwise about the origin (rule: $(x, y) \rightarrow (-y, x)$). What are the coordinates of the image E'?

Answer: _____

7. A translation moves the point (1, 1) to the point (5, -3). Under the same translation, what are the coordinates of the image of the point (0, 2)?

Answer: _____

9. Triangle JKL is congruent to triangle PQR. Side JK has length 12 and corresponds to side PQ. What is the length of side PQ?

Answer: _____

2. Point B is at (-5, 6). It is reflected across the x-axis. What are the coordinates of the image B'?

Answer: _____

4. Point D is at (2, 7). It is rotated 180° about the origin. What are the coordinates of the image D'?

Answer: _____

6. Point F is at (-4, 9). It is rotated 90° clockwise about the origin (rule: $(x, y) \rightarrow (y, -x)$). What are the coordinates of the image F'?

Answer: _____

8. Point G is at (-7, -3). It is reflected across the line $y = x$ (rule: $(x, y) \rightarrow (y, x)$). What are the coordinates of the image G'?

Answer: _____

10. A segment has endpoints (2, 3) and (8, 3), so its length is 6. Rigid transformations preserve length. After the segment is rotated 90° about the origin, what is the length of the image segment?

Answer: _____

11. Point H is at (5, -4). It is first reflected across the x-axis, and then that image is reflected across the y-axis. What are the coordinates of the final image H''?

Answer: _____

12. Point M is at (-6, 2). It is translated by the rule $(x, y) \rightarrow (x - 4, y - 5)$. What are the coordinates of the image M'?

Answer: _____