

NAME: \_\_\_\_\_

*P.I. G.G.54: Define, investigate, justify, and apply isometries in the plane (rotations)*

1. Identify the coordinates of the point  $(9, -8)$  under a rotation of  $90^\circ$  clockwise about the origin.

[A]  $(9, 8)$                       [B]  $(-9, 8)$   
[C]  $(-8, -9)$                 [D]  $(-9, -8)$

2. Find the coordinates of the image of a triangle with vertices  $A(0, 1)$ ,  $B(-6, 0)$ , and  $C(3, -2)$  under a rotation of  $90^\circ$  counterclockwise about the origin.

3. Find the coordinates of the image of a triangle with vertices  $A(0, -3)$ ,  $B(3, 0)$ , and  $C(-7, 4)$  under a rotation of  $90^\circ$  clockwise about the origin.

4. Identify the coordinates of the point  $(2, 4)$  under a rotation of  $180^\circ$  clockwise about the origin.

[A]  $(-2, 4)$                       [B]  $(2, -4)$   
[C]  $(-2, -4)$                 [D]  $(4, 2)$

5. Identify the coordinates of the point  $(-6, 5)$  under a rotation of  $180^\circ$  clockwise about the origin.

[A]  $(6, 5)$                       [B]  $(-6, -5)$   
[C]  $(5, -6)$                       [D]  $(6, -5)$

6. Find the coordinates of the image of a triangle with vertices  $A(0, 7)$ ,  $B(9, 0)$ , and  $C(-9, 1)$  under a rotation of  $90^\circ$  clockwise about the origin.

7. Identify the coordinates of the point  $(3, 7)$  under a rotation of  $90^\circ$  clockwise about the origin.

[A]  $(-3, -7)$                       [B]  $(7, -3)$   
[C]  $(3, -7)$                       [D]  $(-3, 7)$

8. Find the coordinates of the image of a triangle with vertices  $A(0, -6)$ ,  $B(8, 0)$ , and  $C(5, -9)$  under a rotation of  $90^\circ$  counterclockwise about the origin.

9. Find the coordinates of the image of a triangle with vertices  $A(0, 9)$ ,  $B(-4, 0)$ , and  $C(2, 3)$  under a rotation of  $90^\circ$  clockwise about the origin.

10. Identify the coordinates of the point  $(-10, 4)$  under a rotation of  $180^\circ$  clockwise about the origin.

[A]  $(10, 4)$                       [B]  $(10, -4)$   
[C]  $(-10, -4)$                 [D]  $(4, -10)$

[1] C

[2]  $A'(-1, 0), B'(0, -6), C'(2, 3)$

[3]  $A'(-3, 0), B'(0, -3), C'(4, 7)$

[4] C

[5] D

[6]  $A'(7, 0), B'(0, -9), C'(1, 9)$

[7] B

[8]  $A'(6, 0), B'(0, 8), C'(9, 5)$

[9]  $A'(9, 0), B'(0, 4), C'(3, -2)$

[10] B