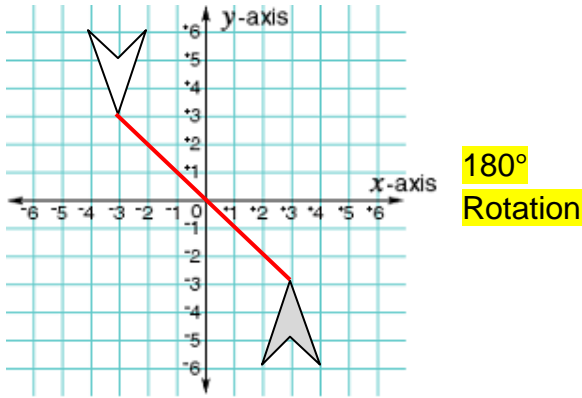


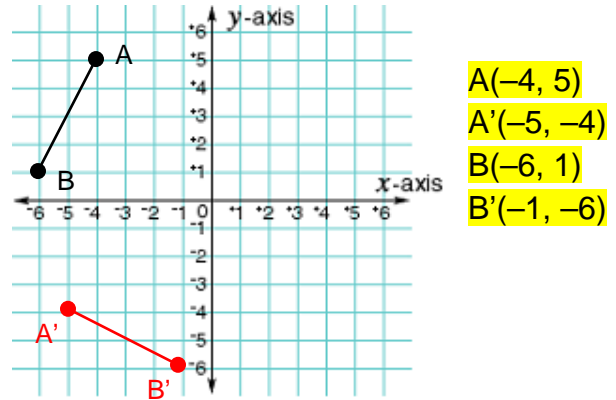
Rotations and Symmetry (page 3)

1) Describe a rotation in one word. **Turn**

2) Tell whether the transformation is a rotation about the origin. If so, give the angle and direction of rotation.

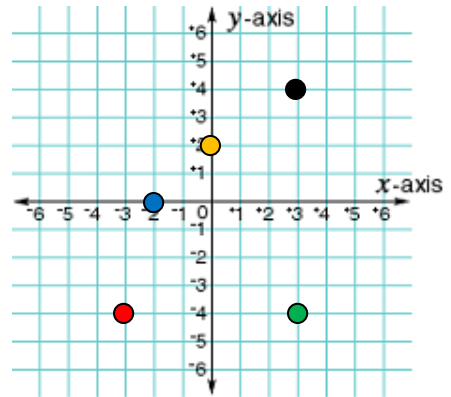


3) Write the coordinates for \overline{AB} . Find the image of \overline{AB} after a 90° counterclockwise rotation.



4) Treasure Hunt: You are located at the point **(3, 4)** in a coordinate plane. You need to find your way to a treasure chest. Starting at (3, 4), move from one image point to the next by following the order of the transformations listed. The final image point is the location of the treasure chest.

1. Rotate 180° **(-3, -4)**
2. Reflect in the y -axis **(3, -4)**
3. Translate 5 units to the left and 4 units up **(-2, 0)**
4. Reflect in the x -axis **(-2, 0)**
5. Rotate 90° clockwise **(0, 2)**



5) CHALLENGE: A triangle is rotated 90° clockwise about the origin, then its image is translated using $(x, y) \rightarrow (x + 3, y - 1)$. The coordinates of the vertices of the final image are (1, -4), (3, -2), and (6, -5). Find the coordinates of the vertices of the original triangle.

(3, -2)

(1, 0)

(4, 3)

