

# Rotations

**Rotation**—turns a figure around a fixed point, called the *center of rotation*

➤ The degree of rotation and direction must be defined.

◆ 90°, 180°, or 270°

◆ clockwise or counterclockwise

90° (x,y) → (y,-x)

180° (x,y) → (-x,-y)

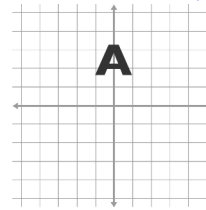
270° (x,y) → (-y,x)

90° (1,2) → (2,-1)

180° (1,2) → (-1,-2)

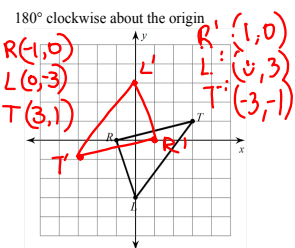
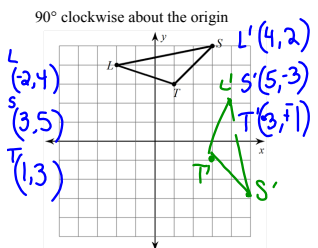
(1,2) → (-2,1)

270°

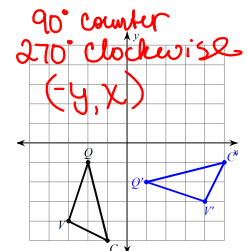
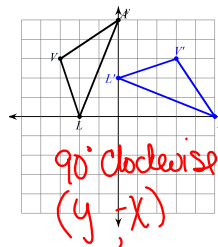


90° 180° 270° 360°

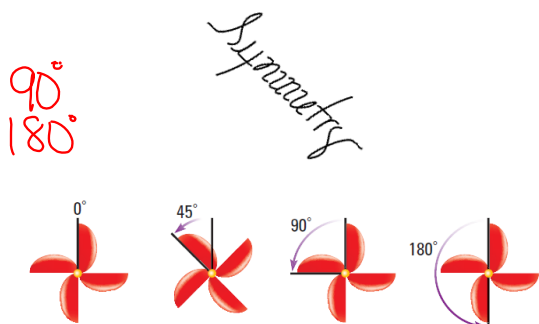
Graph the rotation. Give the coordinates of T'.



The triangle has been rotated clockwise about the origin. State the angle of rotation. Use coordinate notation to describe the rotation.



Rotational symmetry—a figure that can be mapped onto itself by a rotation of  $180^\circ$  or less



### Conclusion

1. What is a rotation? Turns the figure

2. How do you rotate 90, 180, 270?

$$(y, -x) \quad (-x, -y) \quad (-y, x)$$

3. What is symmetry?

4. Questions????

Rotation

$$R_{90}: (x, y) \rightarrow (-y, x)$$

$$R_{180}: (x, y) \rightarrow (-x, -y)$$

$$R_{270}: (x, y) \rightarrow (y, -x)$$

$$R_{-90}: (x, y) \rightarrow (y, -x)$$

## Assignment

## Rotation Wkst

27, 26,

$$a+3 = 4a-3$$

$$3 = 3a-3$$

$$6 = 3a$$

$$2 = a$$

Trans

$$3a-2$$

$$6-2$$

$$4$$