

Rotations (around the origin)

negative rotation
(clockwise) \rightarrow right

positive rotation
(counter clockwise) \rightarrow left

positive 90° rotation \rightarrow same
negative 90° rotation \rightarrow same
positive 270° rotation
negative 270° rotation
 180° rotation

Positive 90° rotation (negative 270° rotation)

$(-2, 3) \rightarrow (-3, -2)$ - switch the x & y-coordinates
 $(-7, 2) \rightarrow (-2, -7)$ - multiply the new x-coordinates by -1
 $(-6, 5) \rightarrow (-5, -6)$
 $(x, y) \rightarrow (-y, x)$

$$R(3, 5) \quad S(2, 0) \quad T(4, -3)$$

$$R'(-5, 3) \quad S'(0, 2) \quad T'(3, 4)$$

Negative 90° rotation (^{positive}
 _{270° rotation})

- switch the x - \leftrightarrow - y -coordinate
- multiply the new y -coordinate by -1 .

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

$$A(-3, -5) \quad B(-2, 4) \quad C(-1, -8)$$

$$A'(-5, 3) \quad B'(4, 2) \quad C'(-8, 1)$$

180° Rotation (could be
positive/negative)

- multiply x \leftrightarrow y -coordinate
by -1

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

$$D(-4, 2) \quad E(-3, 6) \quad F(1, 0)$$

$$D'(4, -2) \quad E'(3, -6) \quad F'(-1, 0)$$

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$$\# \quad | \quad -6 \quad + \quad 8 \quad + \quad 9$$

-8)

1)

active)