LESSON DIGITS 9-3
ROTATING FIGURES

①

Goal: I will be able to **rotate a figure around a center of rotation.**	

Tool Bag Formulas, equations, Vocabulary, etc	Here's How... Notes & Examples
Rotation	a rigid motion that turns a figure about a point
Center of Rotation	The point the figure is rotated around
Angle of Rotation	The number of degrees it rotates.

180°   (3,2)
center of rotation

② Example   Which of the following is a rotation?

a)
Rotation of 270°

b)
Reflection across x-axis

c)
Translation (x, y-4)

③ Angle of Rotation | What is the angle of rotation?

1) Draw a line from the center of rotation through one corner (point)
2) Draw a line on the "new" location corner
3) Measure the angle

④ We Try   Rectangle ABCD has coordinates A (1,2), B (1,0), C (5,0), & D (5,2)

a) Rotate it 90° about the origin
b) Rotate it 180° about the origin
c) Rotate it 270° about the origin

270°   180°   90°

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⑤

d) Use arrow notation to describe the rotations.

$(x,y) \rightarrow (-y,x)$
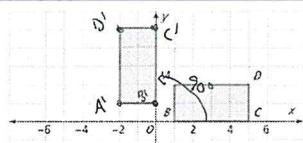
Angle of Rotation	Original Coordinate		Rotated Coordinate
90°	A (1,2)	⟶	A' (-2,1)
	B (1,0)	⟶	B' (0,1)
	C (5,0)	⟶	C' (0,5)
	D (5,2)	⟶	D' (-2,5)

⑥

d) Use arrow notation to describe the rotations.

180°

$(x,y) \rightarrow (-x,-y)$
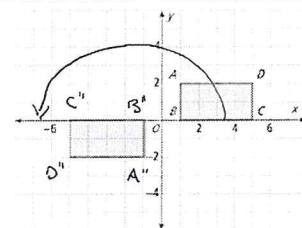
Angle of Rotation	Original Coordinate		Rotated Coordinate
180°	A (1,2)	⟶	A" (-1,-2)
	B (1,0)	⟶	B" (-1,0)
	C (5,0)	⟶	C" (-5,0)
	D (5,2)	⟶	D" (-5,-2)

⑦

d) Use arrow notation to describe the rotations.

270°

$(x,y) \rightarrow (y,-x)$
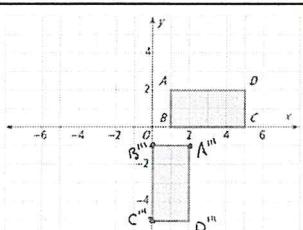
Angle of Rotation	Original Coordinate		Rotated Coordinate
270°	A (1,2)	⟶	A''' (2,-1)
	B (1,0)	⟶	B''' (0,-1)
	C (5,0)	⟶	C''' (0,-5)
	D (5,2)	⟶	D''' (2,-5)