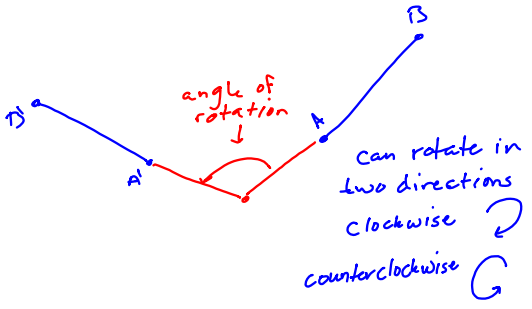
7.3 Rotations

Reflection
Line of Reflection

Rotations
Center of Rotation
Point
majority of time the center of rotation is the origin



Describe rotations

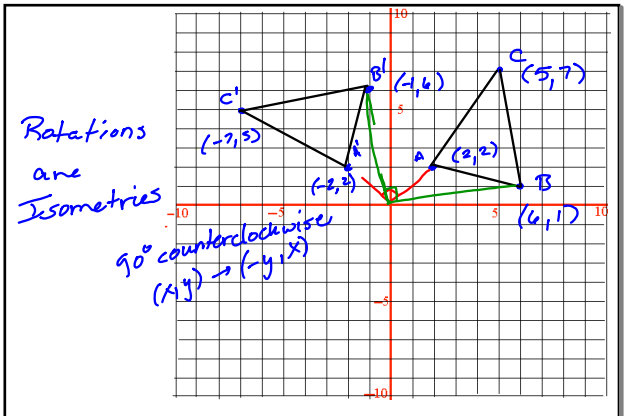
Degree Direction Center

90° counterclockwise on the origin
QI → QII

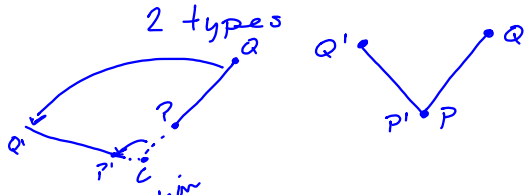
270° clockwise on the origin
QI → QII

180° No direction is needed

Rotations are Isometries

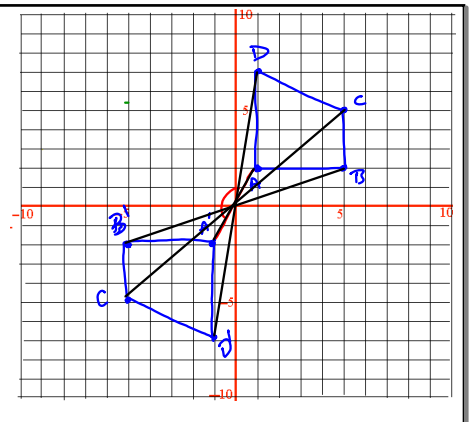


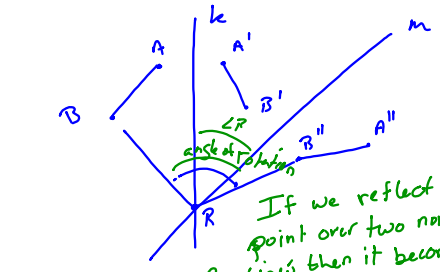
2 types



Rotation P is where not the center

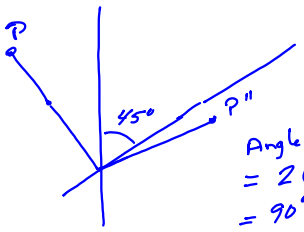
Rotate 180° on the origin





∠ of Rotation = 2m∠R

If we reflect a point over two nonparallel lines then it becomes a Rotation

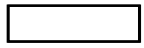


Angle of Rotation
= 2(45)
= 90°

Rotational Symmetry

occurs when we rotate a figure up to 180° and it maps onto itself

Does a Rectangle?



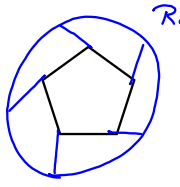
180° symmetry

90°

Irregular shapes

regular always has symmetry

12-gon



If Regular Rotational symmetry is based on the number of sides

$\frac{360}{n}$

72°, 144°

P416-418

2-34 even