

READY, SET, GO!

Name

Period

Date

**READY**

Topic: Rotational symmetry in regular polygons and with transformations.

1. What angles of rotational symmetry are there for a regular pentagon?

$$\frac{360^\circ}{5} = 72^\circ$$

multiples of  $72^\circ$

2. What angles of rotational symmetry are there for a regular hexagon?

$$\frac{360^\circ}{6} = 60^\circ$$

multiples of  $60^\circ$

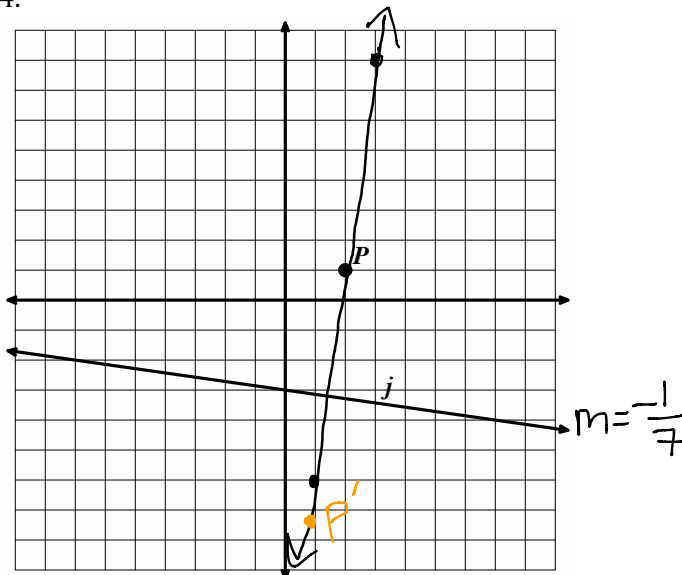
3. If a regular polygon has an angle of rotational symmetry that is  $40^\circ$ , how many sides does the polygon have?

$$\frac{360^\circ}{40^\circ} = 9$$

9 sides

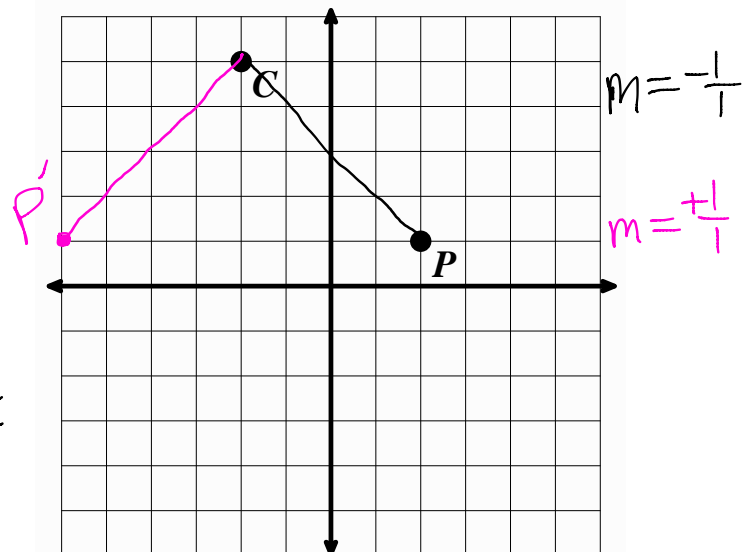
On each given coordinate grid below perform the indicated transformation.

4.



Reflect point  $P$  over line  $j$ .

5.

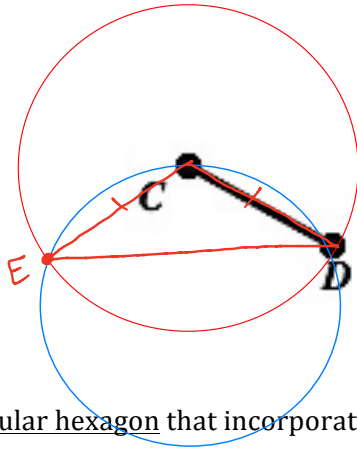


Rotate point  $P$   $90^\circ$  clockwise around point  $C$ .

**SET**

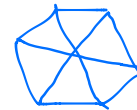
~~Topic: Use Triangle Congruence Criteria to justify conjectures.~~

6. Construct an isosceles triangle that incorporates  $\overline{CD}$  as one of the sides. Construct the inscribing circle around the triangle.



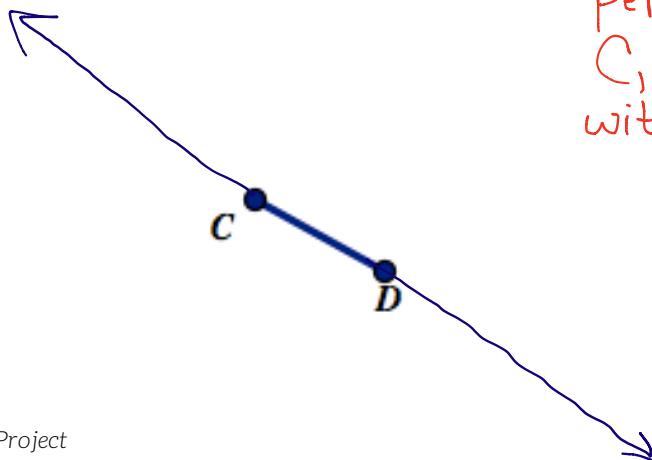
7. Construct a regular hexagon that incorporates  $\overline{CD}$  as one of the sides. Construct the inscribing circle around the hexagon.

Hint: A hexagon is made up of six congruent equilateral triangles



8. Construct a square that incorporates  $\overline{CD}$  as one of the sides. Construct the inscribing circle around the square.

Hint: Construct a perpendicular line through C, then make a rhombus with side length  $\overline{CD}$ .



GO

Topic: Finding Distance and Slope.

For each pair of given coordinate points find distance between them and find the slope of the line that passes through them. Show all your work.

9. (-2, 8), (3, -4)

a. Slope:  

$$\frac{(-4) - (8)}{(3) - (-2)} = \frac{-12}{5}$$

b. Distance:  

$$12^2 + 5^2 = c^2$$

$$144 + 25 = c^2$$

$$c^2 = 169$$

$$c = 13$$

10. (-7, -3), (1, 5)

a. Slope:  

$$\frac{(5) - (-3)}{(1) - (-7)} = \frac{8}{8}$$

b. Distance:  

$$8^2 + 8^2 = c^2$$

$$64 + 64 = c^2$$

$$c^2 = 128$$

$$c = \sqrt{128}$$

11. (3, 7), (-5, 9)

a. Slope:  

$$\frac{(9) - (7)}{(-5) - (3)} = \frac{2}{-8}$$

b. Distance:  

$$2^2 + 8^2 = c^2$$

$$4 + 64 = c^2$$

$$c^2 = 68$$

$$c = \sqrt{68}$$

12. (1, -5), (-7, 1)

a. Slope:  

$$\frac{(1) - (-5)}{(-7) - (1)} = \frac{6}{-8}$$

b. Distance:  

$$6^2 + 8^2 = c^2$$

$$36 + 64 = c^2$$

$$c^2 = 100$$

$$c = 10$$

13. (-10, 31), (20, 11)

a. Slope:  

$$\frac{(11) - (31)}{(20) - (-10)} = \frac{-20}{30}$$

b. Distance:  

$$20^2 + 30^2 = c^2$$

$$400 + 900 = c^2$$

$$c^2 = 1300$$

$$c = \sqrt{1300}$$

14. (16, -45), (-34, 75)

a. Slope:  

$$\frac{(75) - (-45)}{(-34) - (16)} = \frac{120}{-50}$$

b. Distance:  

$$120^2 + 50^2 = c^2$$

$$14400 + 2500 = c^2$$

$$c^2 = 16900$$

$$c = 130$$