Check

4. What is the angle of rotation symmetry for a shape with each order of rotational symmetry?

a) 3

$\frac{360}{3}$

$= 120°$

b) 5

$= 72°$

c) 9

$= 40$

d) 12

$= 30°$

5. What is the order of rotational symmetry for each angle of rotation symmetry?

a) 60°

$\frac{360}{60}$

$= 6$

b) 20°

$= 18$

c) 45°

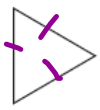
$= 8$

d) 36°

$= 10$

6. What is the order of rotational symmetry and angle of rotation symmetry for each regular polygon?

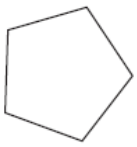
a) an equilateral triangle



order = 3

∠rot = 120°

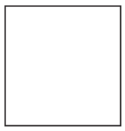
b) a regular pentagon



order = 5

∠rot = 72°

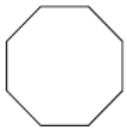
c) a square



order = 4

∠rot = 90°

d) a regular octagon

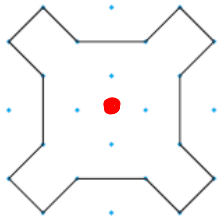


order = 8

∠rot = 45°

8. Does each shape have rotational symmetry about the red dot? If it does, state the order and the angle of rotation symmetry.

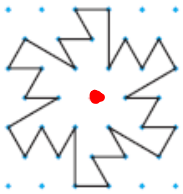
a)



order = 4

∠rot = 90°

b)

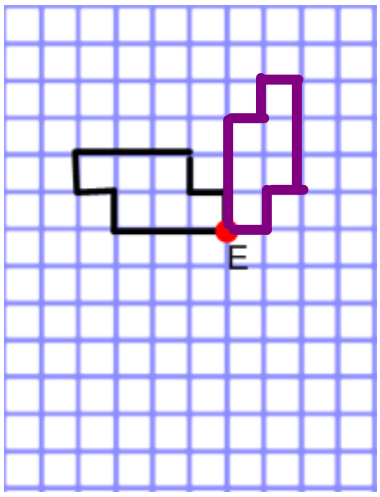


order = 6

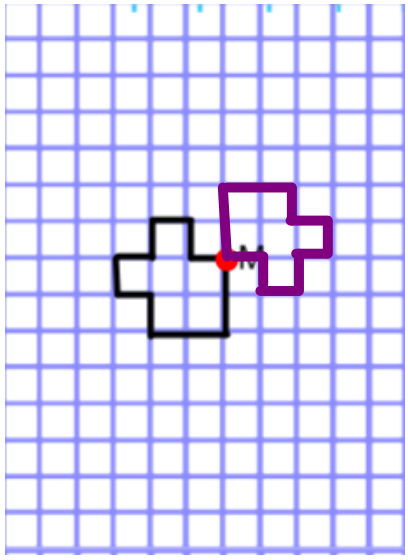
∠rot = 60°

9. Copy each shape on grid paper. Draw the rotation image after each given rotation.

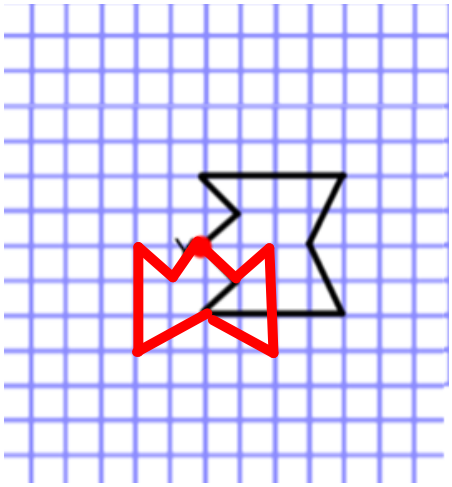
a) 90° clockwise about E



b) 180° about M



C) 270° counter clockwise about Y

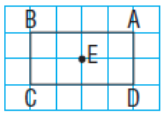


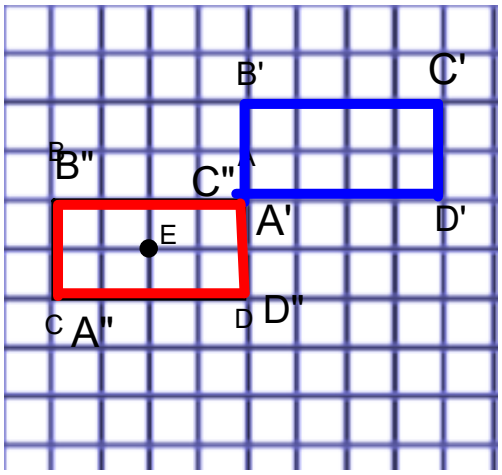
13. **Assessment Focus** Rotate each shape.

a) rectangle ABCD

i) 180° about vertex A (Blue)

ii) 180° about centre E (Red)

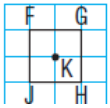


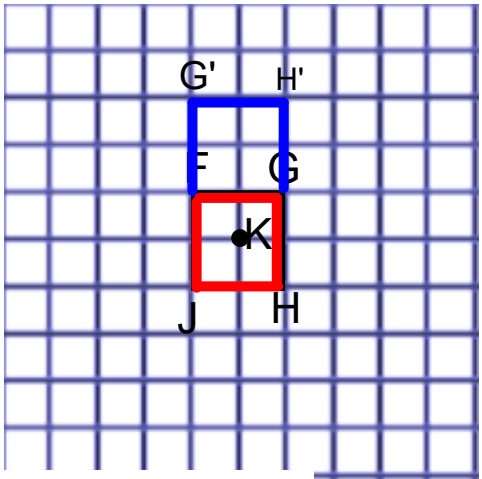


b) square FGHJ counterclockwise through

i) 90° about vertex F (Blue)

ii) 90° about centre K (Red)





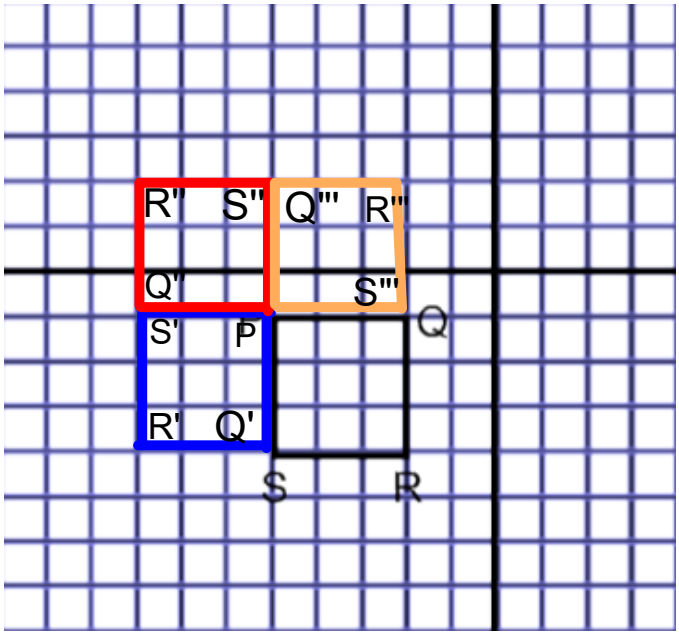
14. a) Rotate square PQRS clockwise about vertex P through:

i) 90° (Blue)

ii) 180° (Red)

iii) 270° (Yellow)

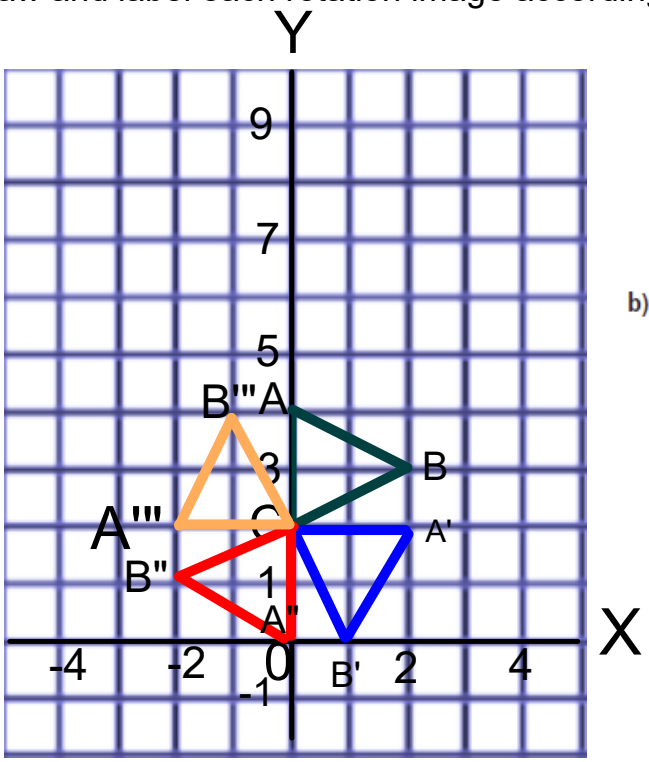
Draw and label each rotation image according to color.



15. Triangle ABC is part of a larger shape that is to be completed by three rotations.

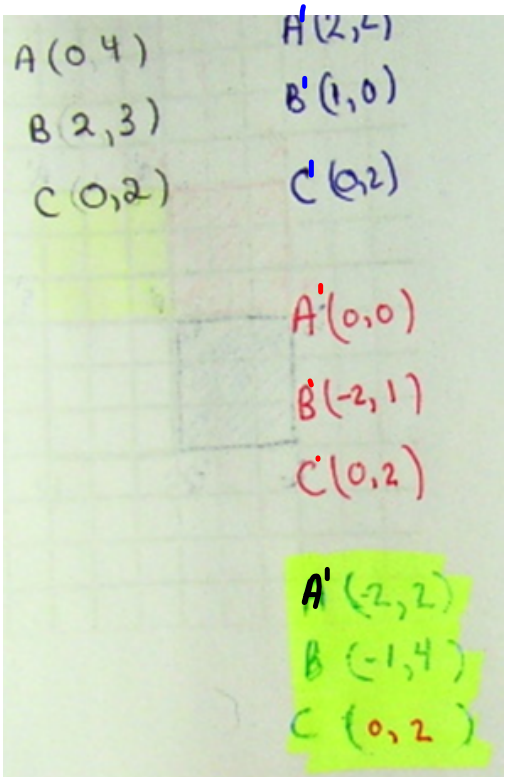
a) Rotate ΔABC clockwise about vertex C through: i) 90° (Blue) ii) 180° (Red) iii) 270° (Yellow)

Draw and label each rotation image according to color.



b) List the coordinates of the vertices of the larger shape formed by the triangle and its images. Describe any rotational symmetry.

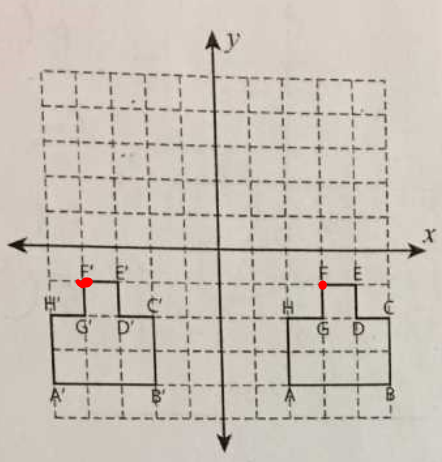
The shape forms a rotational symmetry of 4 about point "c'



Translation of Shapes

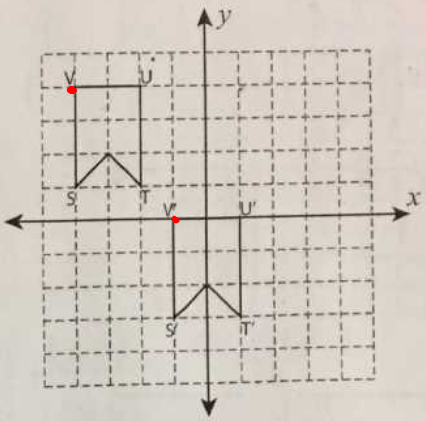
Write a rule to describe each translation.

1)



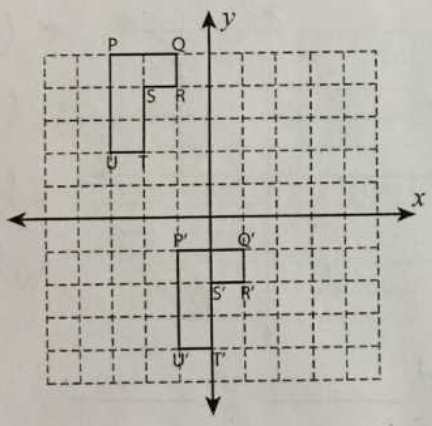
L 7

2)



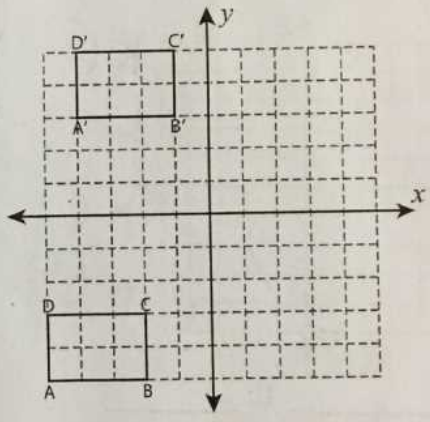
R 3 D 4

3)



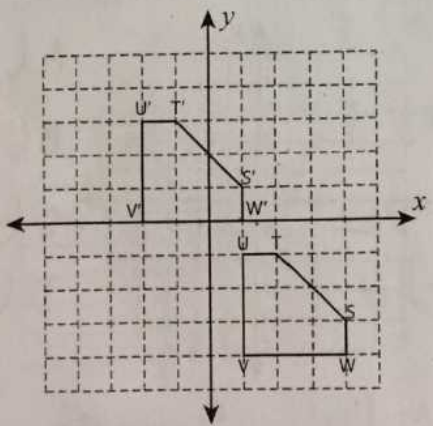
R 2 D 6

4)



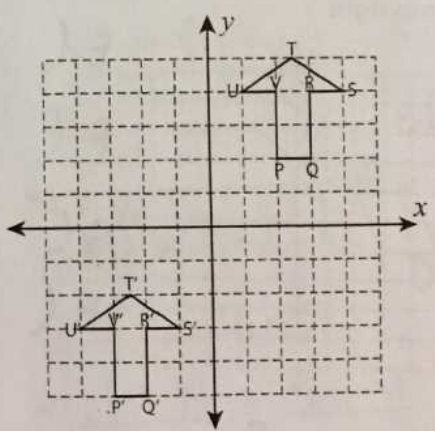
R 1 U 8

5)



L 3 U 4

6)



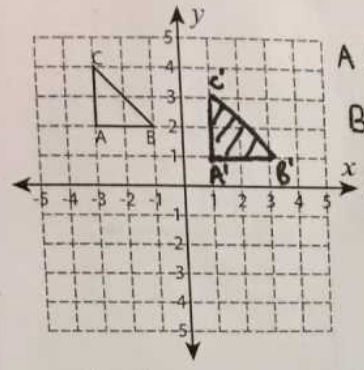
L 5 D 7

Write the New Coordinates

Sheet 1

Graph the image of each figure after the given translation. Also write the coordinates of the image.

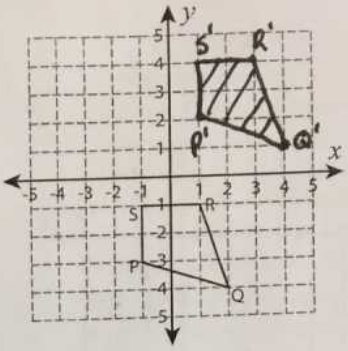
1) 1 unit down and 4 units right



A′: (1, 1) , B′: (3, 1)

C′: (1, 3)

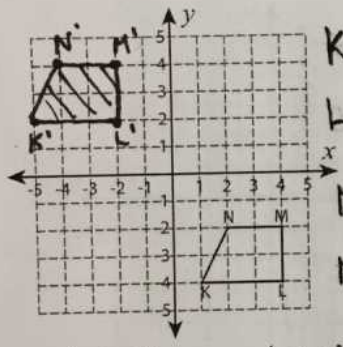
2) 2 units right and 5 units up



P′: (1, 2) , Q′: (4, 1)

R′: (3, 4) , S′: (1, 4)

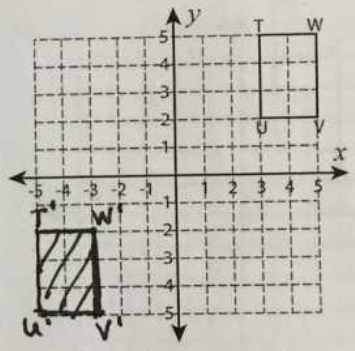
3) 6 units up and 6 units left



K′: (-5, 2) , L′: (-2, 2)

M′: (-2, 4) , N′: (-4, 4)

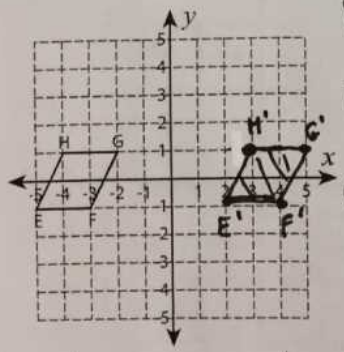
4) 8 units left and 7 units down



T′: (-5, -2) , U′: (-5, -5)

V′: (-3, -5) , W′: (-3, -2)

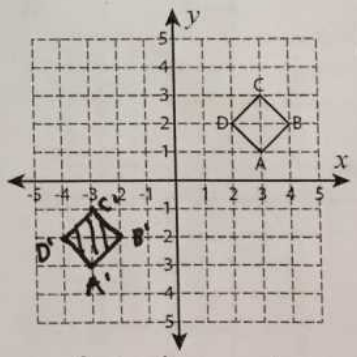
5) 7 units right



E′: (2, -1) , F′: (4, -1)

G′: (5, 1) , H′: (3, 1)

6) 4 units down and 6 units left



A′: (-3, -3) , B′: (-2, -2)

C′: (-3, -1) , D′: (-4, -2)