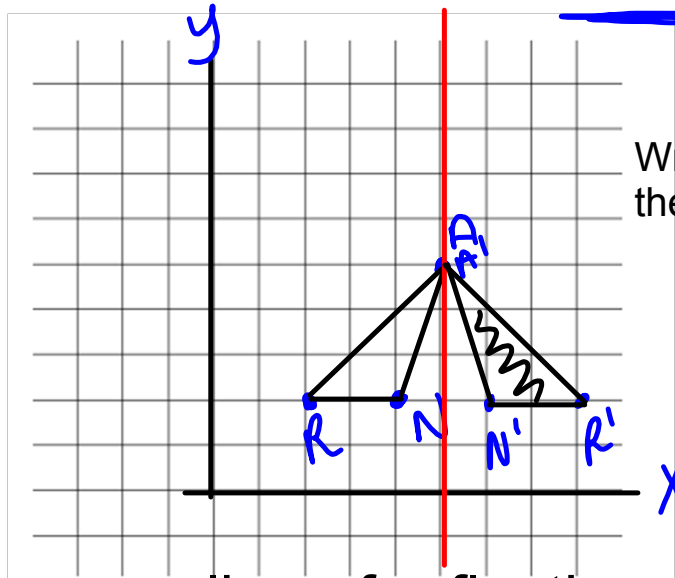


Warm-Up

May 2, 2016

Plot $R(2,2)$, $A(5,5)$, $N(4,2)$

Reflect through 5 on the x-axis



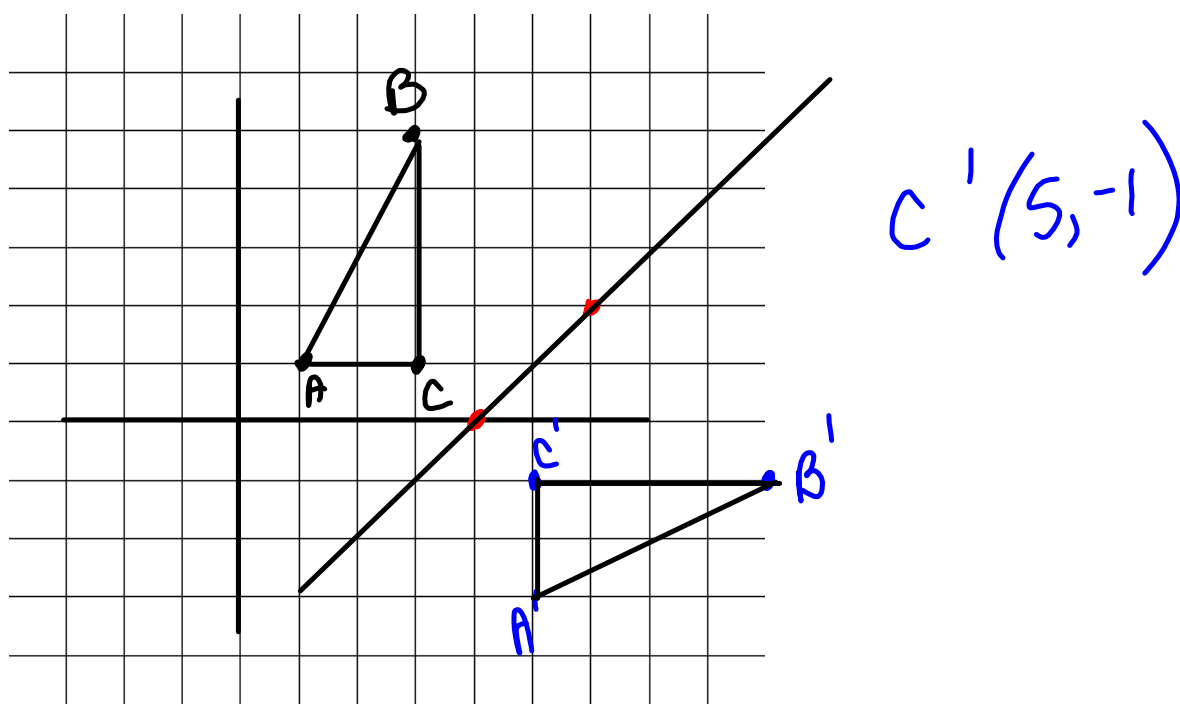
Write the coordinates for the reflected image

$R'(8,2)$

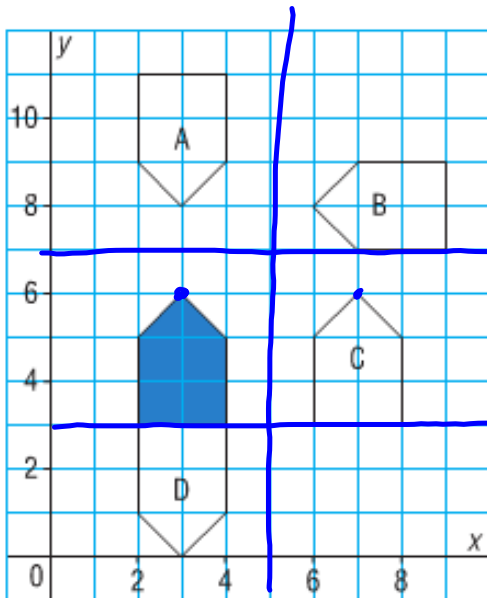
Describe your line of reflection:

Plot the following points: **A (1,1)**, **B (3,5)** and **C (3, 1)**

Draw a reflection through points (4,0) and (6,2)



10. Identify the pentagons that are related to the blue pentagon by a line of reflection. Describe the position of each line of symmetry.



A is a reflection through y axis at 7
 B is not a reflection
 C is a reflection through x axis at 5
 D is a reflection through 3 on y axis

Section 7.6

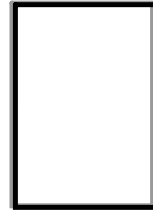
Rotations and Rotational Symmetry



Terms:

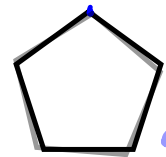
Rotational Symmetry

A shape has rotational symmetry when it coincides with itself after a rotation of less than 360 degrees about its center.



Order of rotation

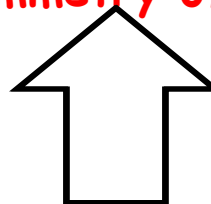
The number of times the shape coincides with itself, during a rotation of 360 degrees.



Angle of rotation symmetry

is equal to $\frac{360}{\text{the order of rotation}}$

******A shape that requires 360 degrees to return to its original position does not have rotational symmetry. A shape cannot have rotational symmetry of order 1.******

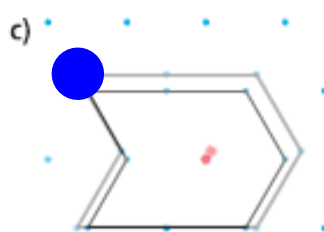
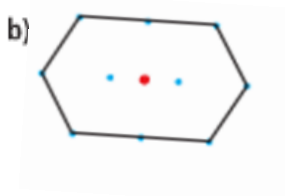
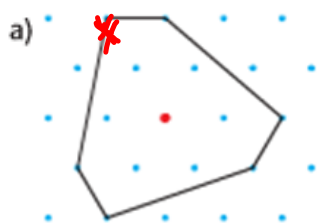


An object has an order of rotation equal to 4 what is the angle of rotation?

$$\text{angle of rotation} = \frac{360^\circ}{\text{order of rotation}}$$

$$\frac{360^\circ}{4} = 90^\circ$$

Determine which hexagons below have rotational symmetry.
 State the order of rotation and the angle of rotation symmetry.



[the number times overlaps on itself]
order of rotational symmetry

a) 3

b) 2

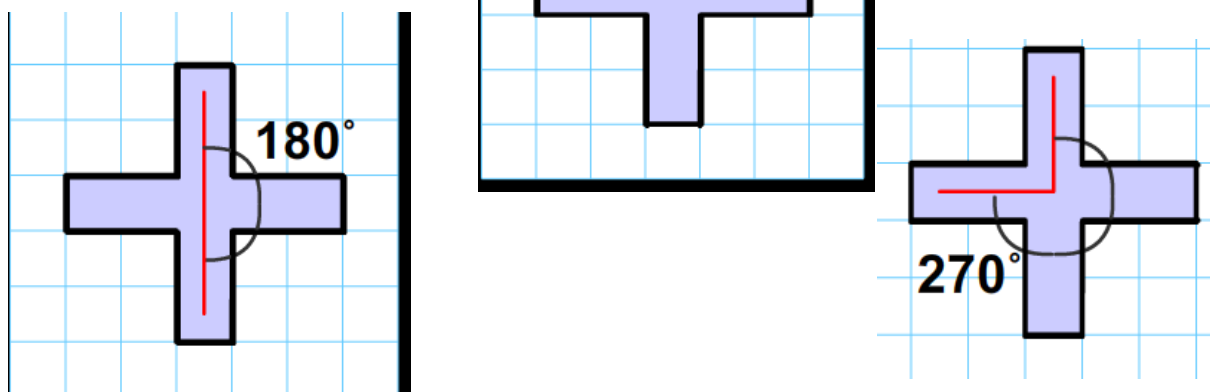
c)

None

$\frac{360^\circ}{\text{order}}$
angle of rotation

$$\frac{360}{3} = 120^\circ$$

$$\frac{360}{2} = 180^\circ$$

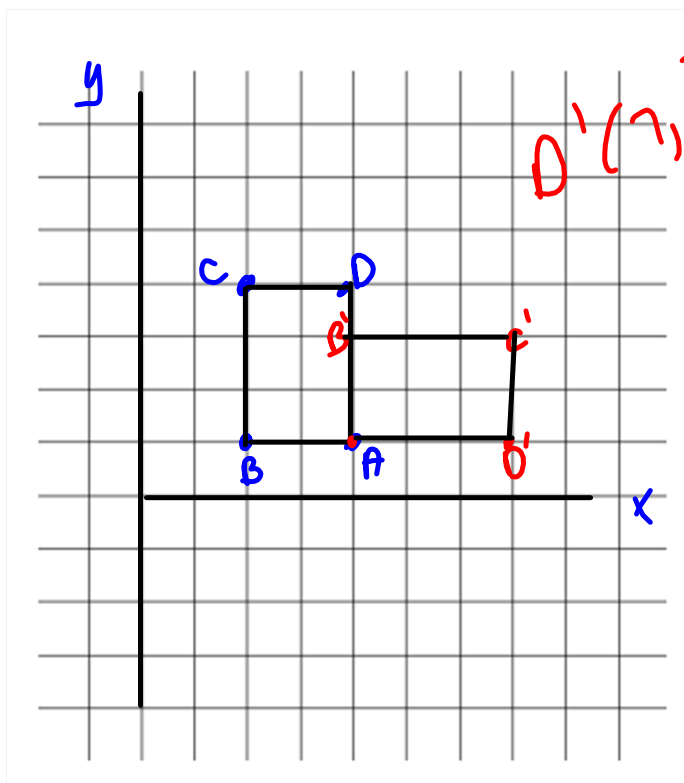


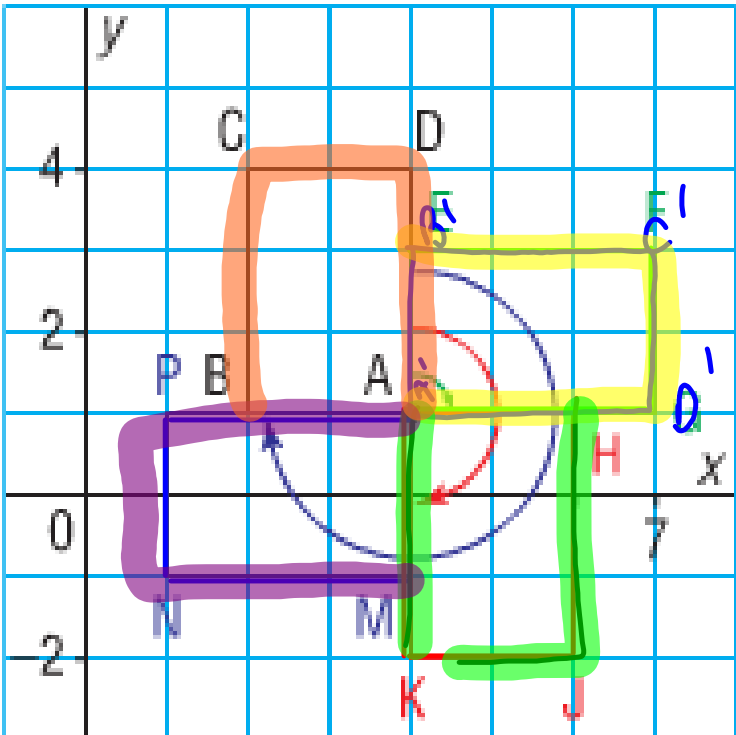
Plot the following

- A (4,1)
- B (2,1)
- C (2,4)
- D (4,4)

1. Rotate ABCD 90 degrees clockwise about vertex A
2. Rotate ABCD 180 degrees clockwise about vertex A
3. Rotate ABCD 270 degrees about vertex A *clockwise*

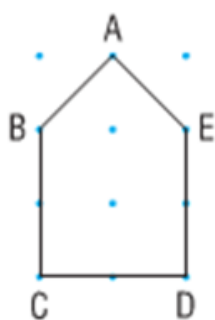
Label each rotation image



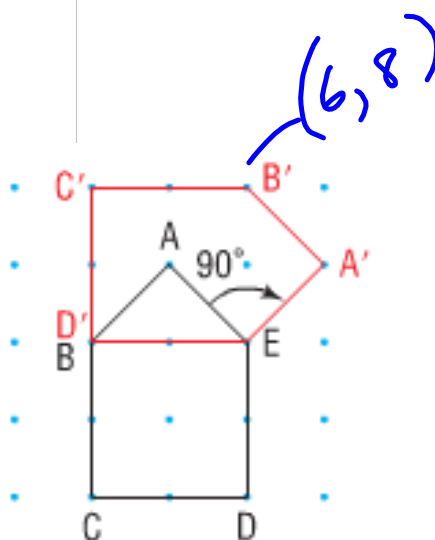


$D''(4, -2)$
 $D'''(1, 1)$

- a) Rotate pentagon ABCDE
 90° clockwise about vertex E.
 Draw the rotation image.



A (4,6)
 B (2,4)
 C (2,1)
 D (6,1)
 E (6,4)



Homework

Homework

Page 365

4, 5,

6

order of rotation

angle of rotation

8, 9, 13, 14, 15

$$\text{angle rotation} = \frac{360}{\text{order}}$$

$$\text{order rotational symmetry} = \frac{360^\circ}{\text{angle of rotation}}$$