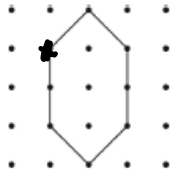
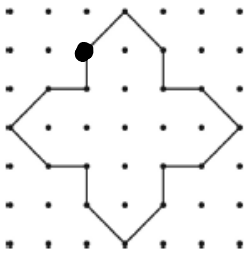
Warm-Up

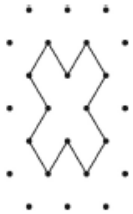
May 7,2018

1. Which polygons have rotational symmetry? State the order of rotation and the angle of rotation symmetry for each.

a) 

b) 

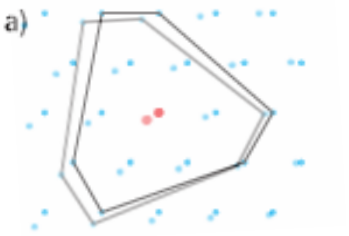
c) 

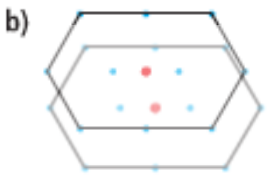
d) 

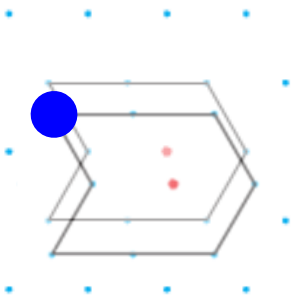
order of rotation: a) 2 b) 4 c) None d) 2

angle of rotation: a) $\frac{360}{2} = 180^\circ$ b) $\frac{360}{4} = 90^\circ$ d) $\frac{360}{2} = 180^\circ$

State the order of rotation and the angle of rotation symmetry.

a) 

b) 

c) 

order of rotational symmetry [# times overlaps before 360°]

A) 3

B) 2

C) None

angle of rotation

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

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

Section 7.6 Rotations and Rotational Symmetry

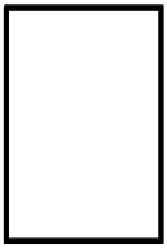
Terms:

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

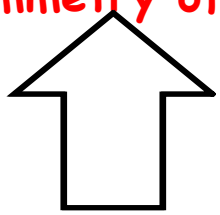
The number of times the shape coincides with itself, during a rotation of 360 degrees.



Angle of rotation symmetry

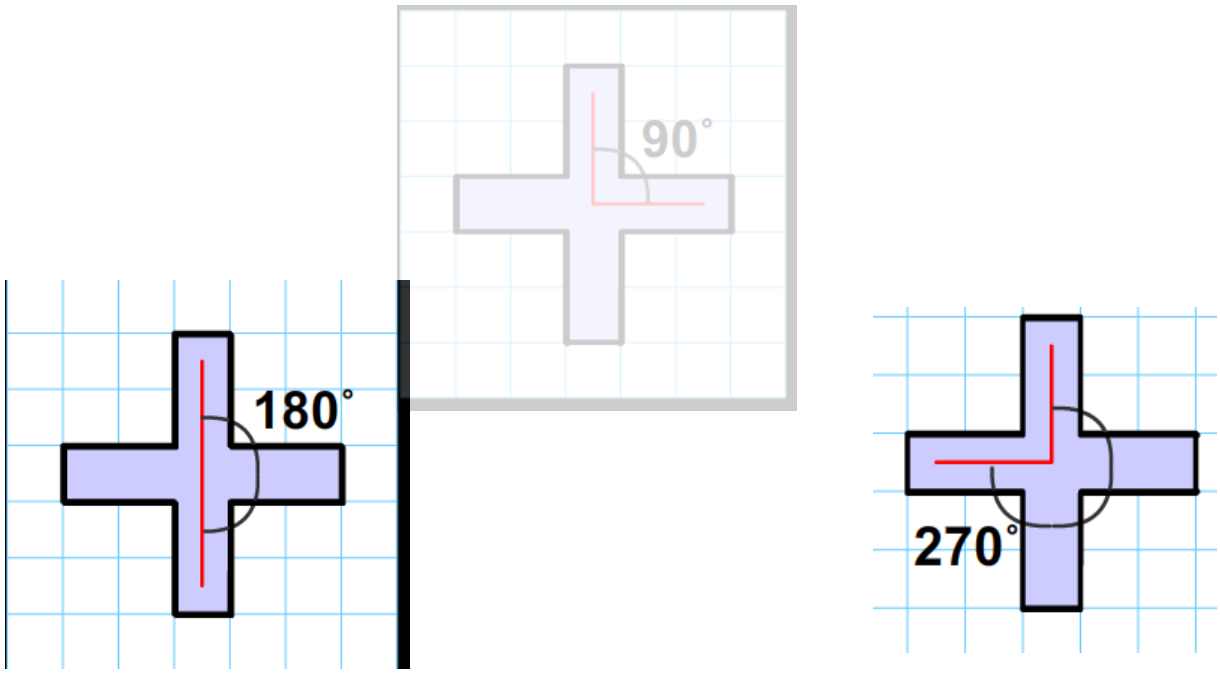
is equal to $\frac{360}{\text{the order of rotation}}$

****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?

Section 7.6
Rotations and Rotational Symmetry


90°
180°
270°

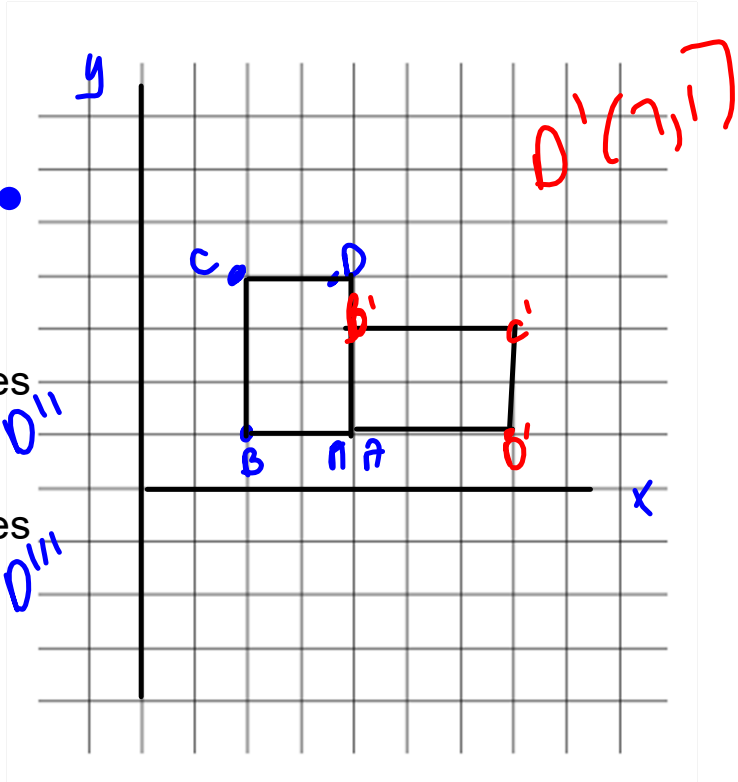
Plot the following
A (4,1)
B (2,1)
C (2,4)
D (4,4)

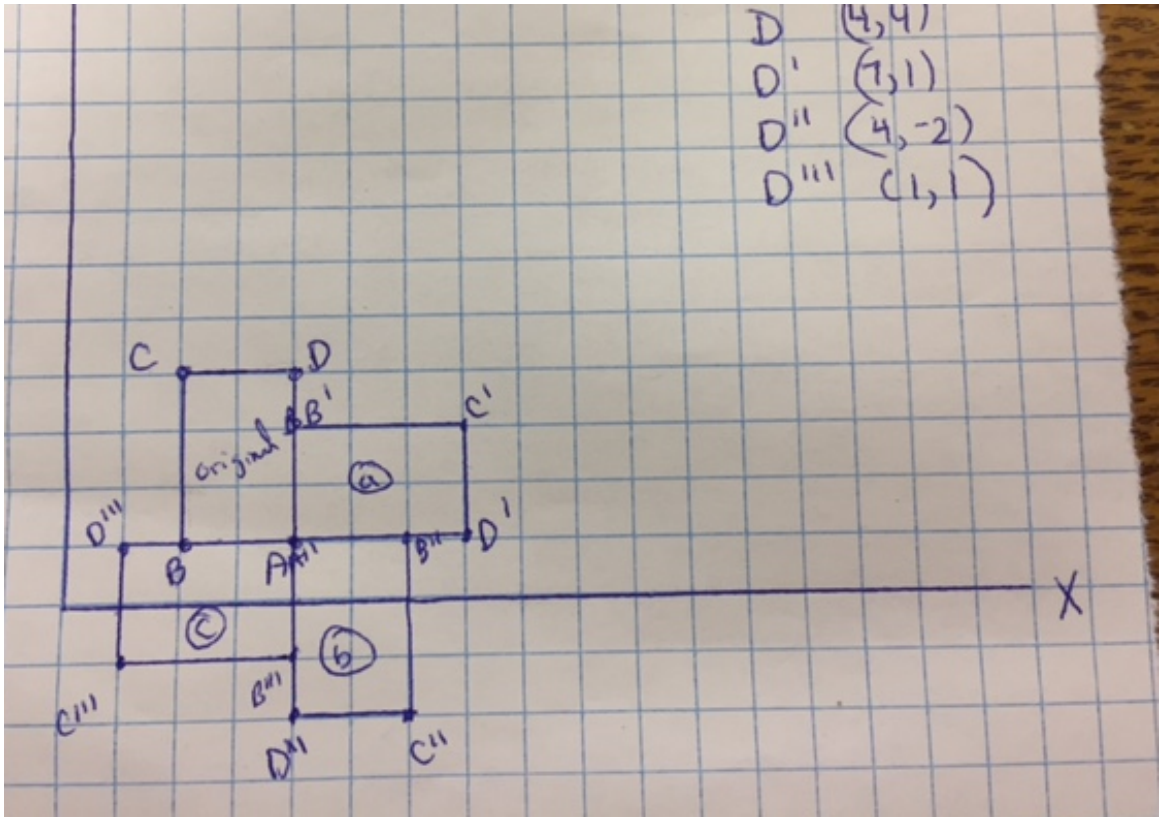
1. Rotate ABCD 90 degrees clockwise about vertex A

2. Rotate ABCD 180 degrees clockwise about vertex A

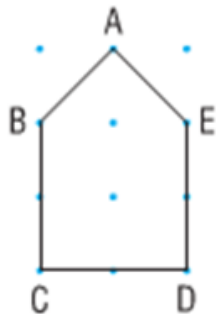
3. Rotate ABCD 270 degrees Clockwise about vertex A

Label each rotation image

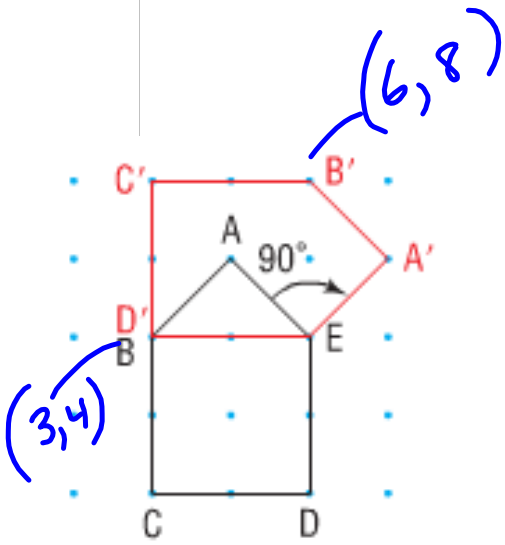



D (4,4)
D' (7,1)
D'' (4,-2)
D''' (1,1)
C
D
B'
C'
original
a
D'''
B
A''
B''
D'
X
c
b
C'''
B''
D''
C''

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

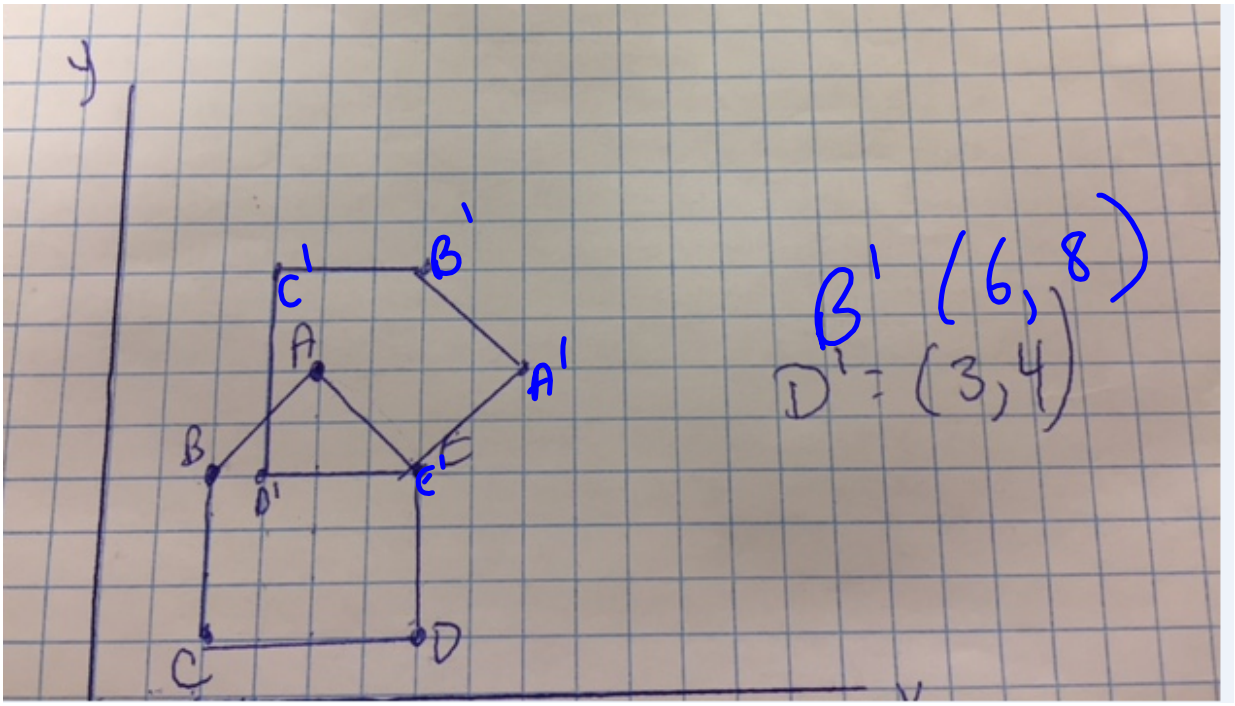


A (4,6)
B (2,4)
C (2,1)
D (6,1)
E (6,4)



(6,8)

(3,4)


y
C'
B'
A
A'
B
D'
E'
E
C
D
x
B' (6, 8)
D' : (3, 4)

Homework

Homework

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4, 5,

6 order of rotation | angle of rotation

9,13[a,b],14,15

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

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

Use coordinates!

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