Curriculum Outcomes

(SS3) Demonstrate an understanding of similarity of polygons.

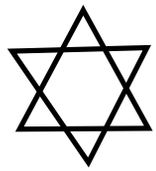
(SS4) Draw and interpret scale diagrams of 2-D shapes.

(SS5) Demonstrate an understanding of line and rotation symmetry.

Student Friendly: Rotating shapes a certain degrees, about specific point.

Determine if the following shapes have rotational symmetry. If so state the order of rotation and the angle of rotationsymmetry.

1)

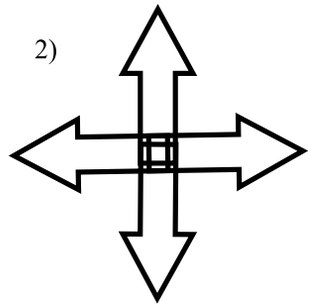


order'. 6

angle = $\frac{360}{6}$

$= 60^\circ$

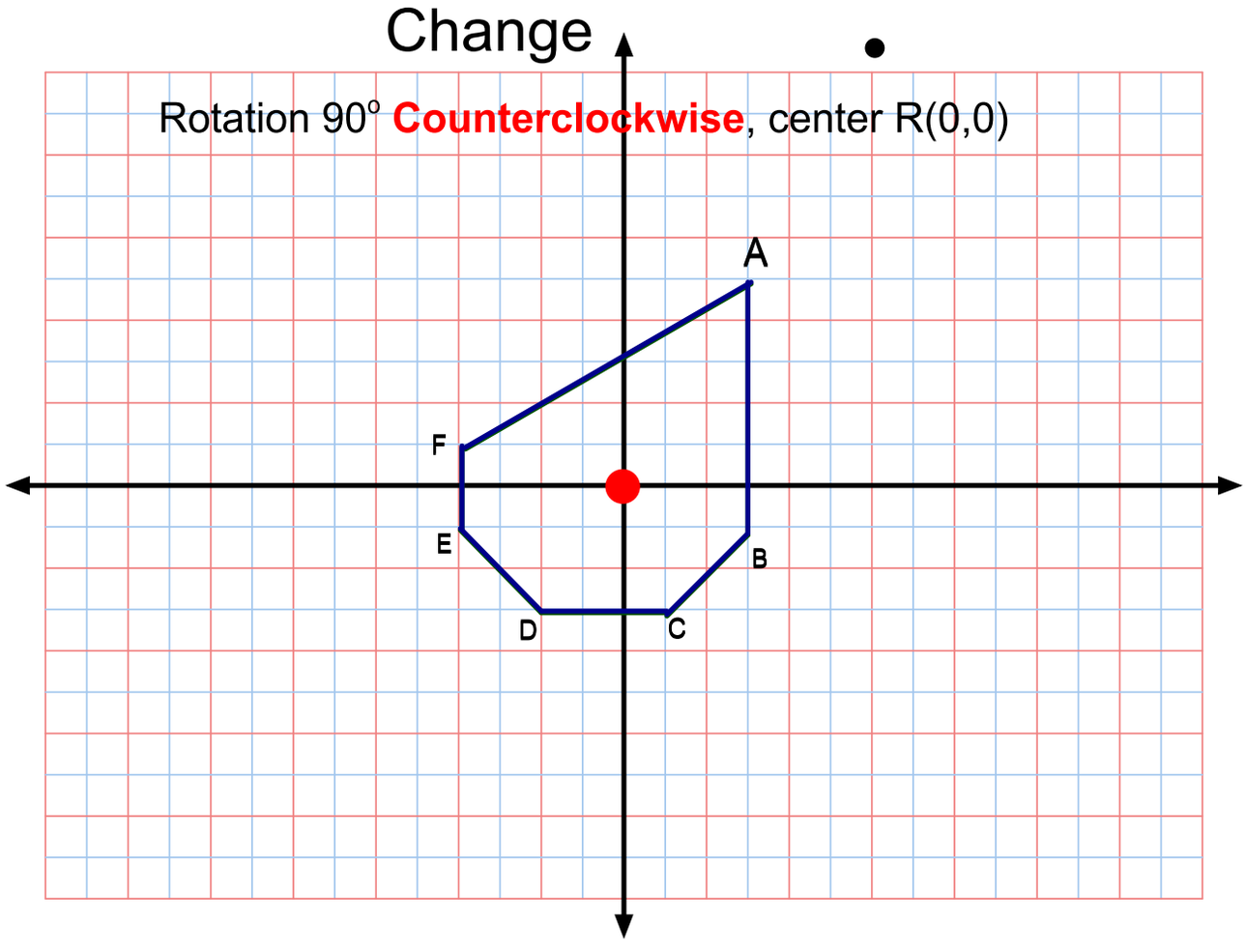
2)

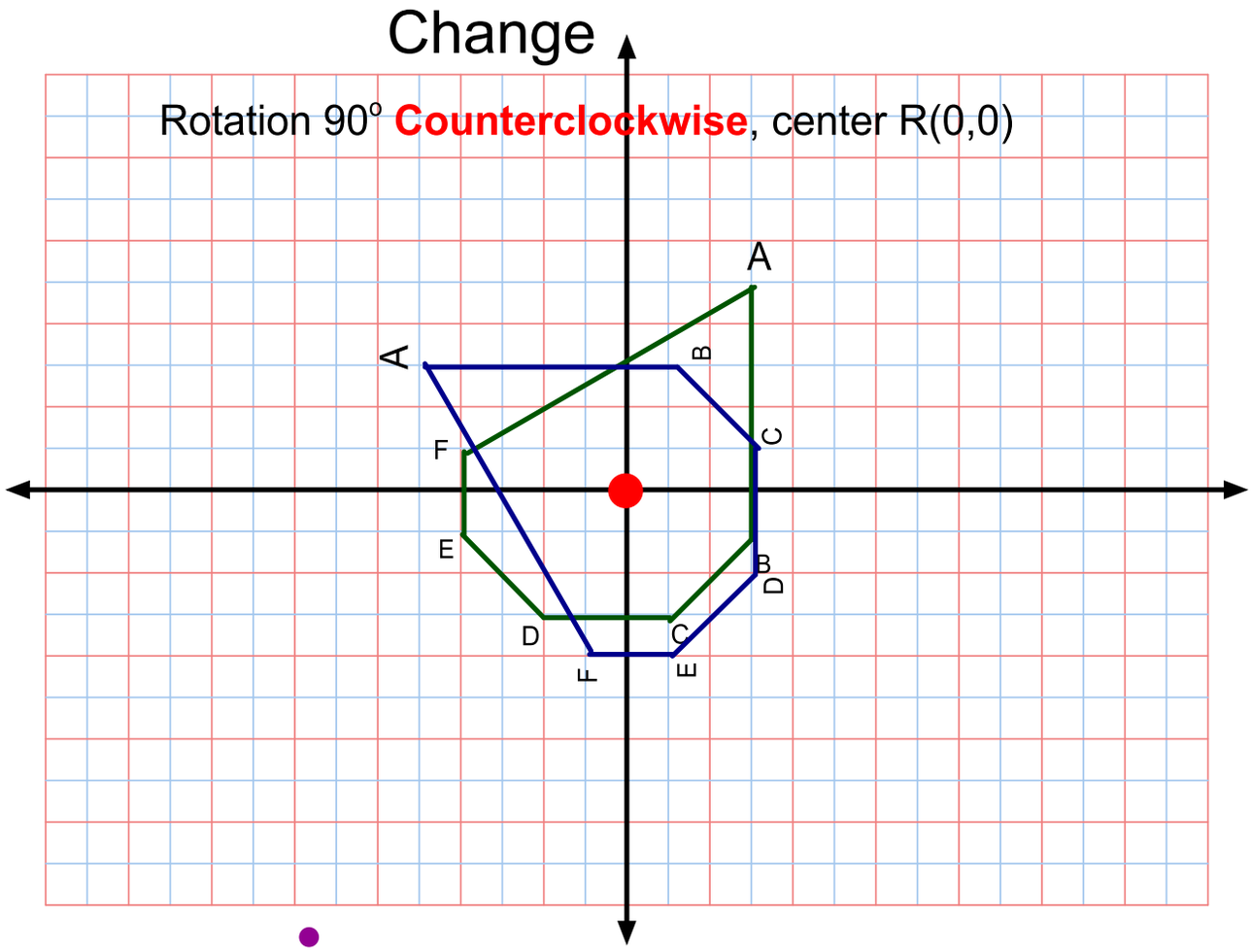


order: 4

angle = $\frac{360}{4}$

$= 90^\circ$


Change
Rotation 90° Counterclockwise, center R(0,0)
A
F
E
B
D
C



A(3 , 5)

B(3, -1)

C(1 , -3)

D(-2 , -3)

E(-4 , -1)

F(-4, 1)

A'(-5, 3)

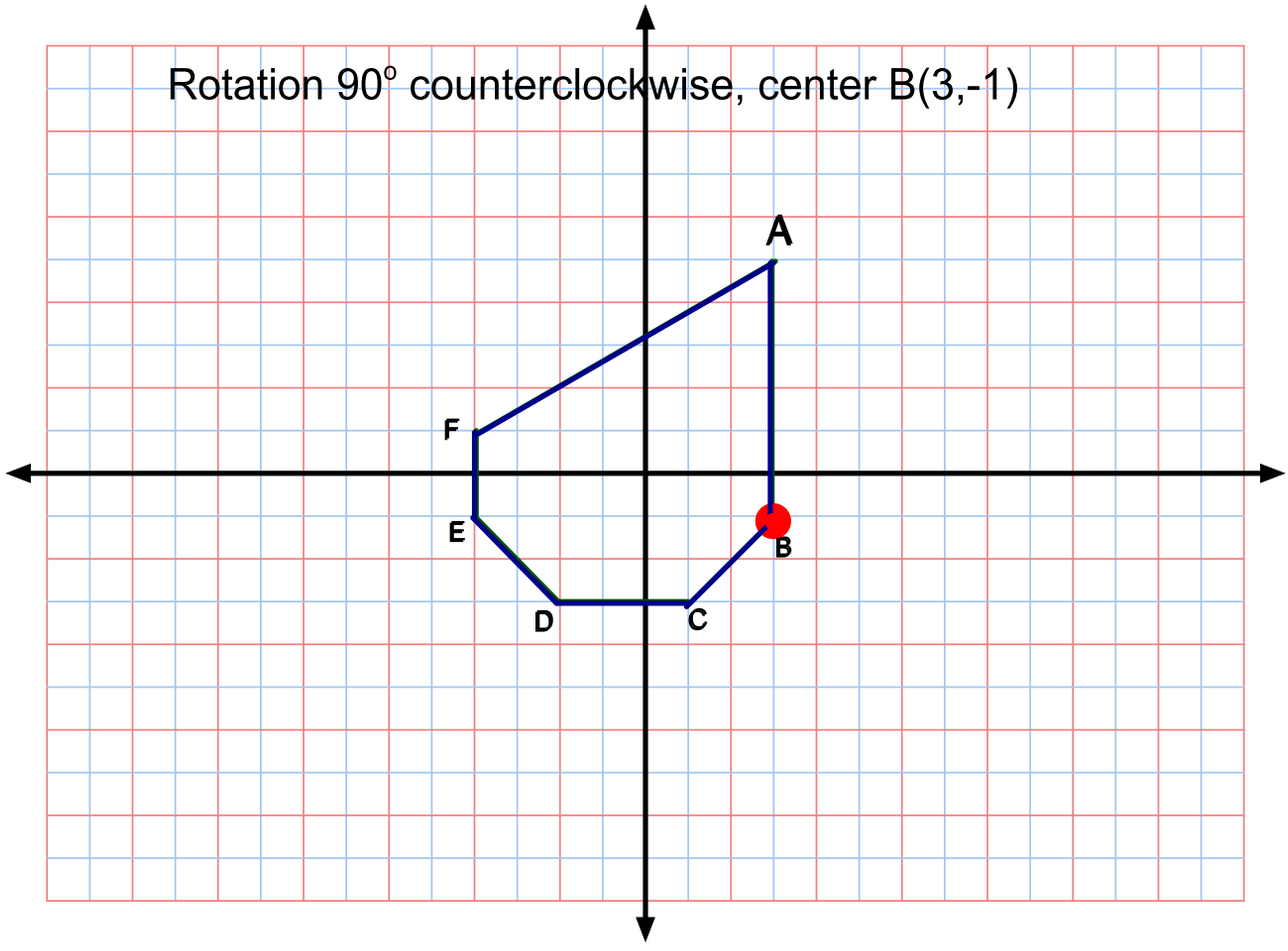
B'(1 , 3)

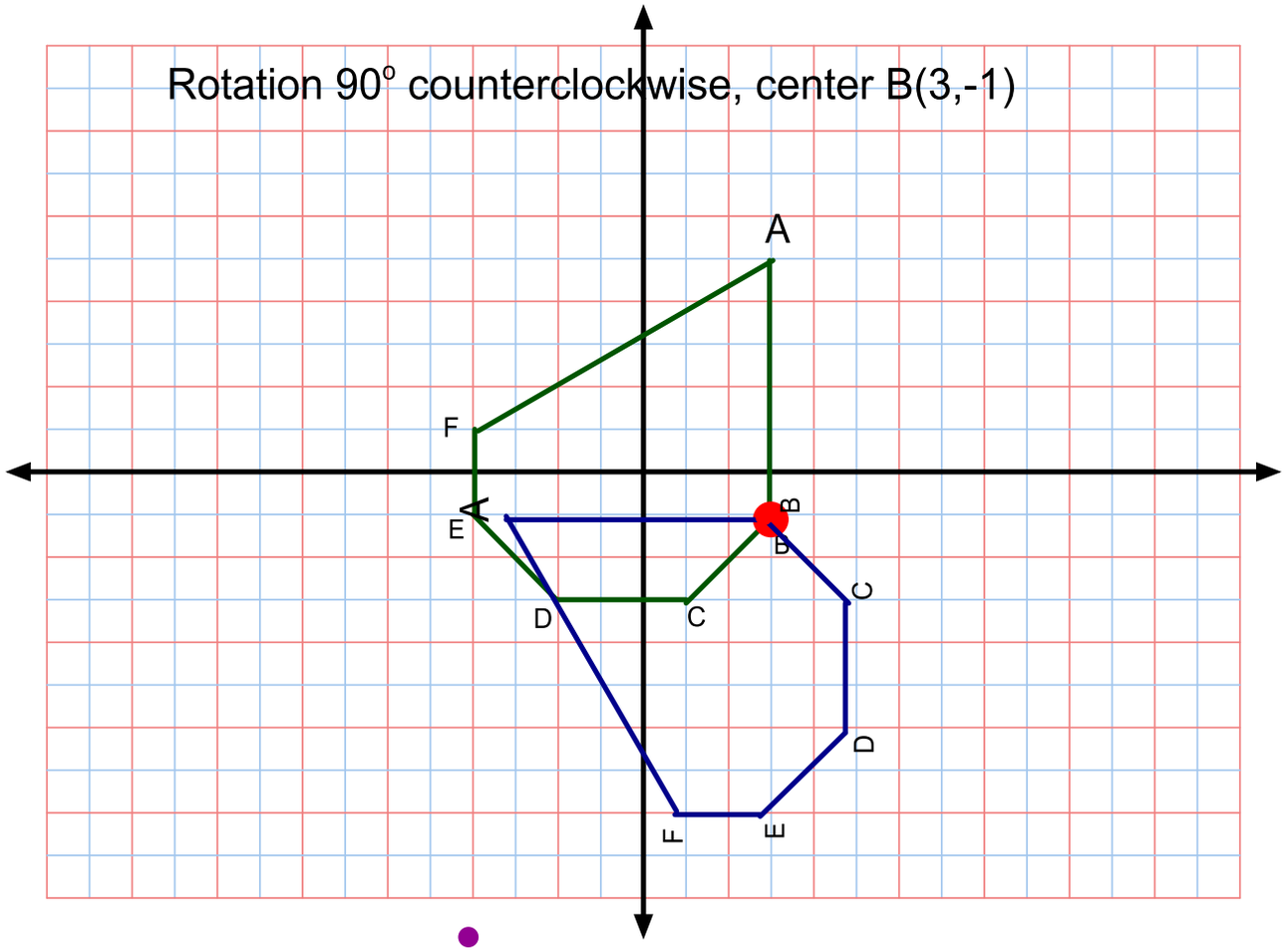
C'(3 , 1)

D'(3 , -2)

E'(1 , -4)

F'(-1 , -4)


Rotation 90° counterclockwise, center B(3,-1)
A
F
E
D
C
B



A(3 , 5)

B(3, -1)

C(1 , -3)

D(-2 , -3)

E(-4 , -1)

F(-4, 1)

A'(-3 , -1)

B'(3 , -1)

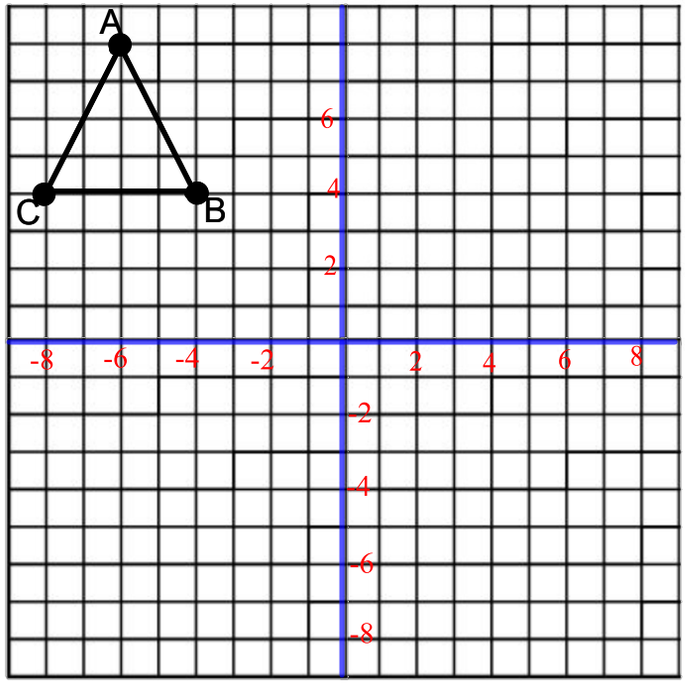
C'(4 , -3)

D'(4 , -6)

E'(3 , -8)

F'(1 , -8)

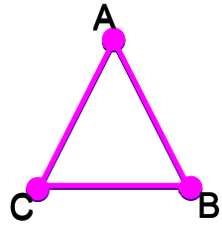
Warm Up



A(,)

B(,)

C(,)



a) Reflect the triangle ABC about the vertical line -1

A'(,)

B'(,)

C'(,)

b) Reflect the triangle ABC about the horizontal line 2

A''(,)

B''(,)

C''(,)

c) Reflect the triangle ABC about the oblique line (-3, -3) and (6, 6)

A'''(,)

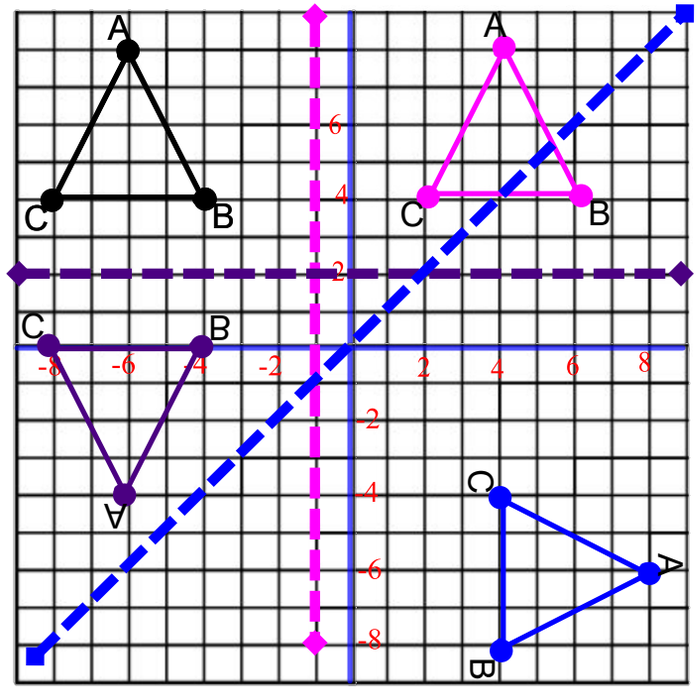
B'''(,)

C'''(,)

d) What is the Order of Rotation of the triangle ABC

e) What is the Angle of Rotation

Warm Up



A(-6, 8)

B(-4 , 4)

C(-8 , 4)

a) Reflect the triangle ABC about the vertical line -1

A'(4 , 8)

B'(2 , 4)

C'(6 , 4)

b) Reflect the triangle ABC about the horizontal line 2

A''(-6,-4)

B''(-4 , 0)

C''(-8 , 0)

c) Reflect the triangle ABC about the oblique line (-3, -3) and (6, 6)

A'''(8 , -6)

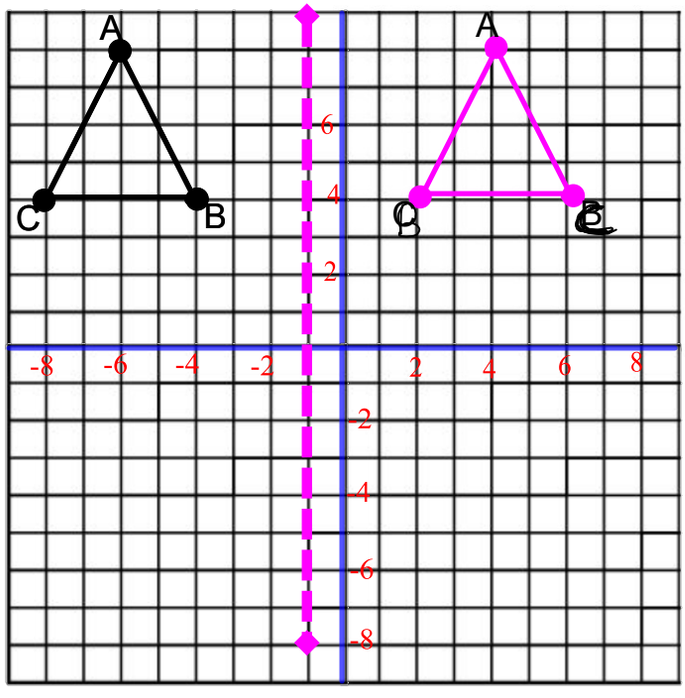
B'''(4 , -4)

C'''(4 , -8)

d) What is the Order of Rotation of the triangle ABC

e) What is the Angle of Rotation

Warm Up



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C'(6 , 4)

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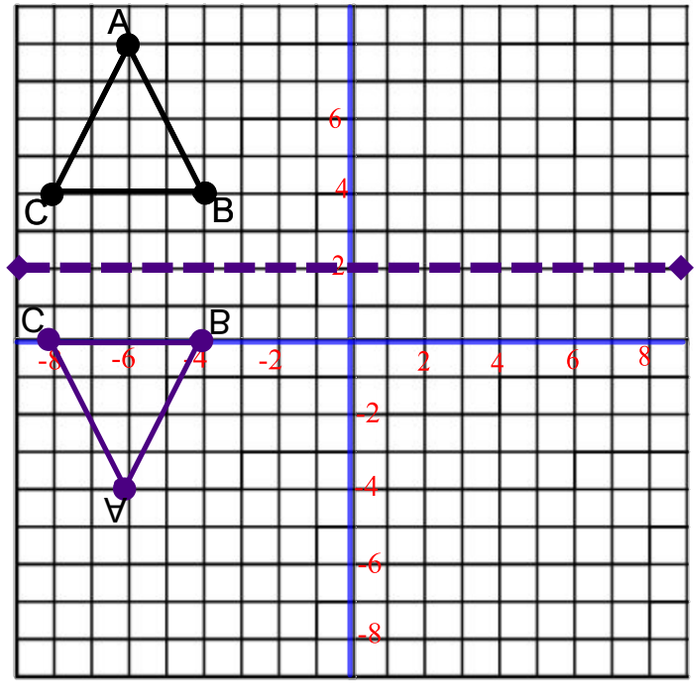

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d) What is the Order of Rotation of the triangle ABC

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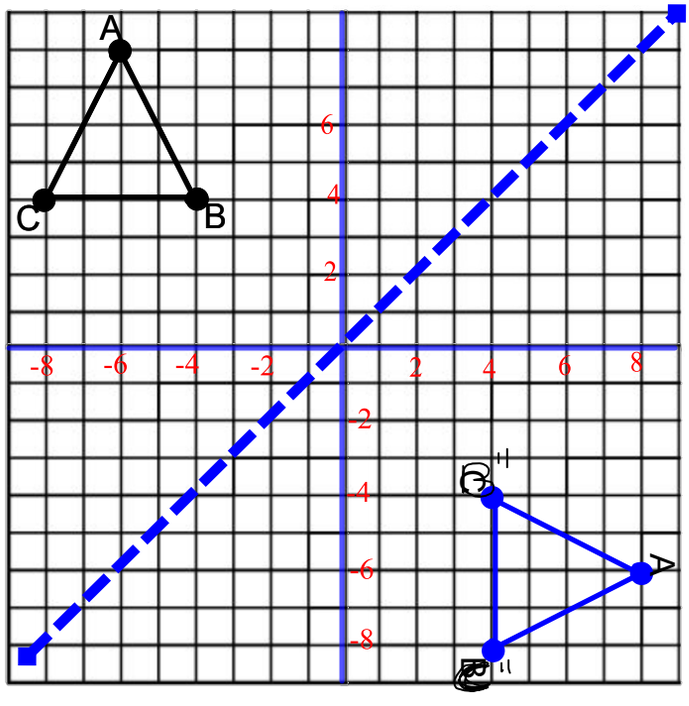
Warm Up



A(-6, 8)

B(-4 , 4)

C(-8 , 4)

a) Reflect the triangle ABC about the vertical line -1

A'(4 , 8)

B'(2 , 4)

C'(6 , 4)

b) Reflect the triangle ABC about the horizontal line 2

A''(-6,-4)

B''(-4 , 0)

C''(-8 , 0)

c) Reflect the triangle ABC about the oblique line (-3, -3) and (6, 6)

A'''(8 , -6)

B'''(4 , -4)

C'''(4 , -8)

d) What is the Order of Rotation of the triangle ABC

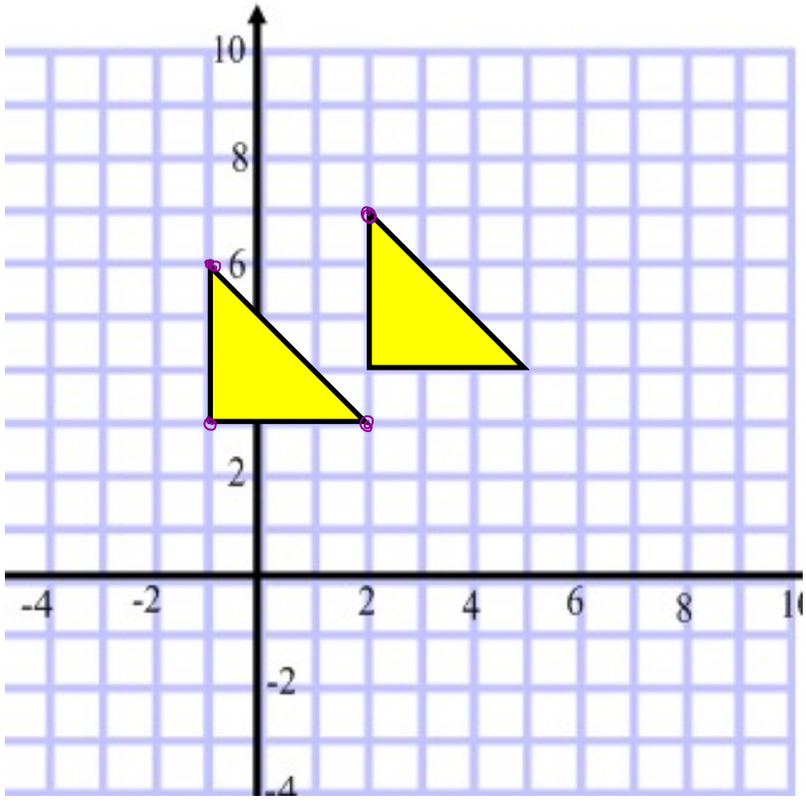
e) What is the Angle of Rotation

Translation

In Geometry, "Translation" simply means **Moving or Slide**

Every point of the shape must move:

- the **same distance**
- in the **same direction.**

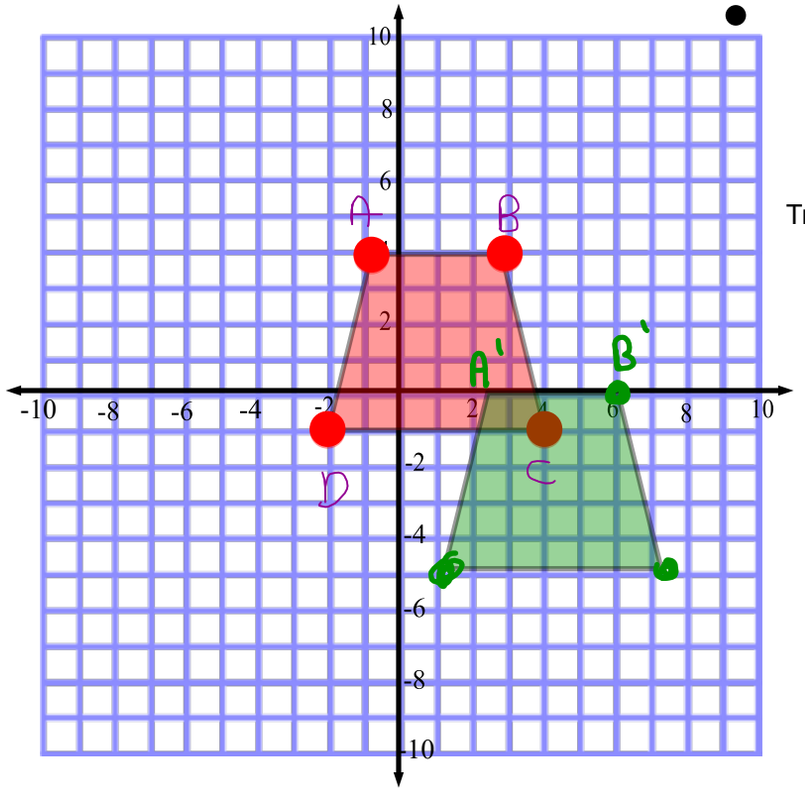


Translate the shape:

Left 3 units and 1 Unit Down

Notation:

L3 and 1D



Translate the shape:

Right 3 units and 4 Unit Down

Notation:

3R 4D

R3 D4

A (-1, 4) A'(2, 0)

B (3, 4) B'(6, 0)

C (4, -1) C' (7, -5)

D (-2, -1) D' (1, -5)

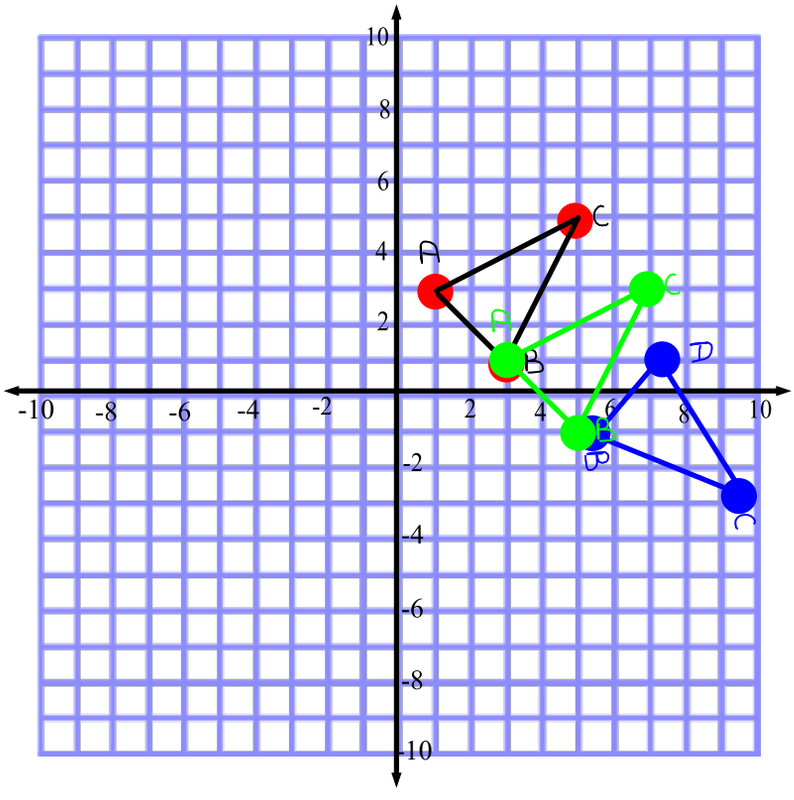
On grid paper plot the following points:
A (1, 3) B (3,1) and C (5,5)

Do the following Transformations:

1. A translation [slide] 2 units right and 2 units down of ABC.

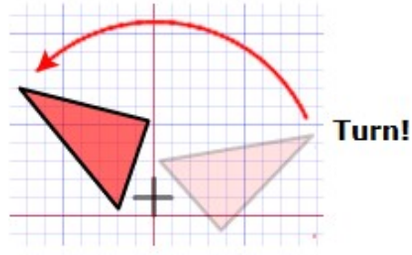
A' (3, 1)
B' (5, -1)
C' (7, 3)

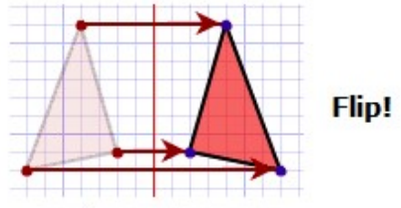
2. A rotation of the triangle A'B'C' clockwise 90° about B'

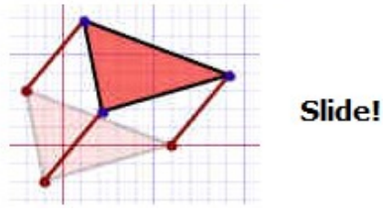


There are three types of transformations:

1. reflections [Line of reflection]
   - Reflect through x-axis
   - Reflect through y-axis
   - *oblique two coordinates
2. rotations
   - order of rotation
   - angle of rotation
3. translations [slide]
   Left 3 up 2 [L3U2]
   right 4 down2 [R4 D2]







Class/Homework

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~~9~~, ~~10~~, 13, 14a,15