Curriculum Outcomes

(SS3) Demonstrate an understanding of similarity of polygons.

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

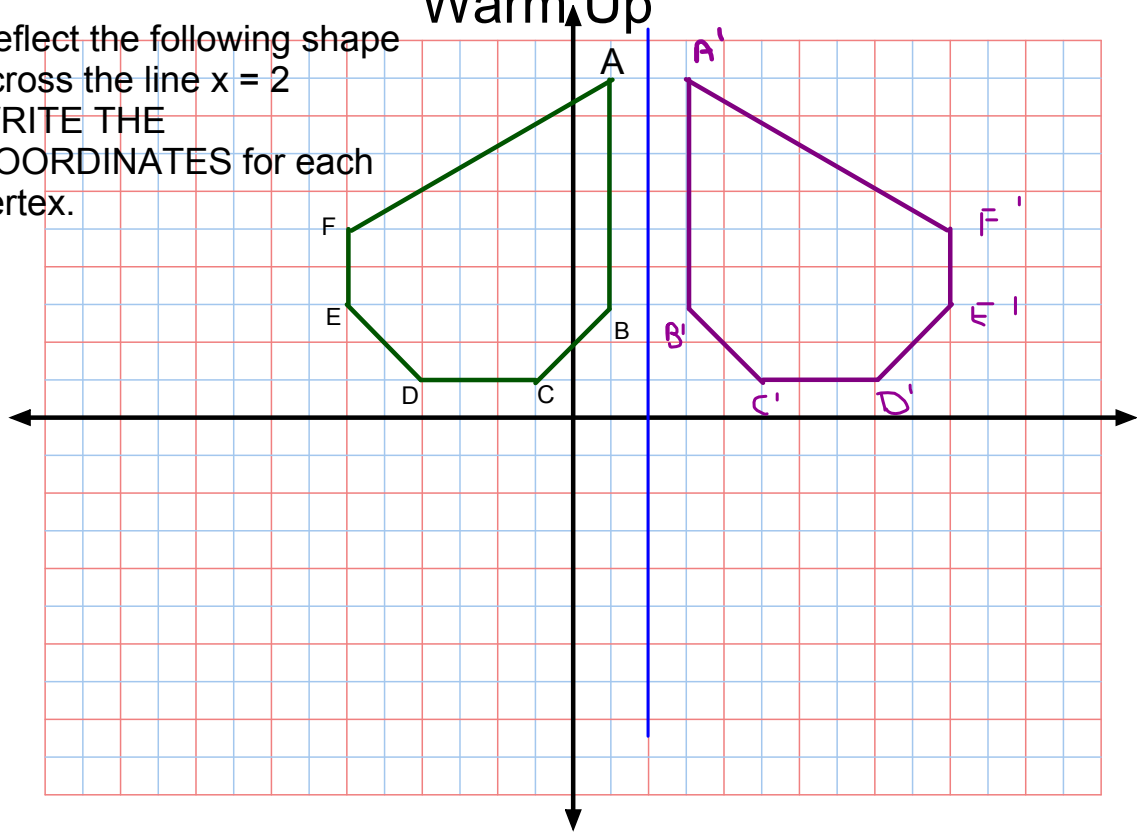
(SS5) Demonstrate an understanding of line and rotation symmetry.

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

Apr 20-8:21 AM

Warm Up

Reflect the following shape across the line x = 2
WRITE THE COORDINATES for each vertex.



Apr 18-1:10 PM

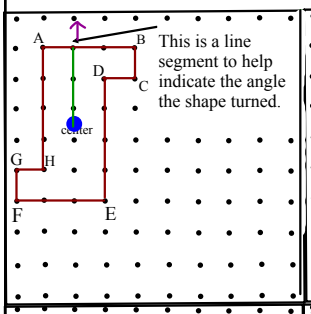
Section 7.6

Rotations & Rotational Symmetry

Apr 12-7:45 PM

Lets rotate this object about its center

On your copy draw the rotated



This is a line segment to help indicate the angle the shape turned.

Rotate 90°

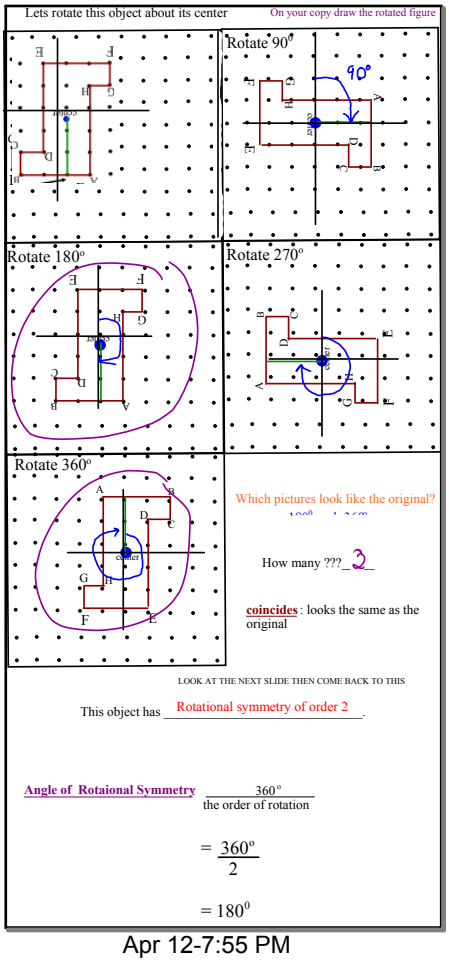
Rotate 180°

Rotate 270°

Rotate 360°

Which pictures look like the original?

Apr 12-7:55 PM



Apr 12-7:55 PM

Rotations

A shape has rotational symmetry when it coincides with itself after a rotation of 360° about its centre.

Order of Rotation is the number of times a shape coincides with itself during a 360° rotation

How to state this?

rotational symmetry of order___

Angle of Rotational Symmetry $\frac{360°}{\text{the order of rotation}}$

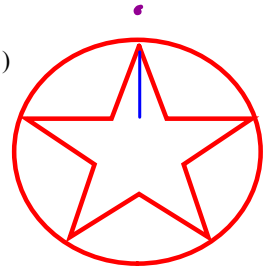
Note:
A shape that requires a rotation of 360° to return to its original shape does not have a rotational symmetry. A shape cannot have a rotational symmetry of 1.

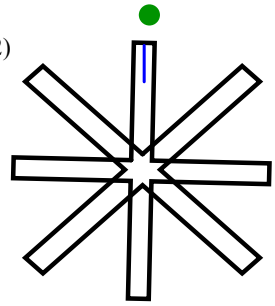
Look at the web book video in rotations

www.mathmakessense.ca

Apr 12-8:27 PM

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

1) 

2) 

3) 

order = 5

$\angle rot = \frac{360}{5}$

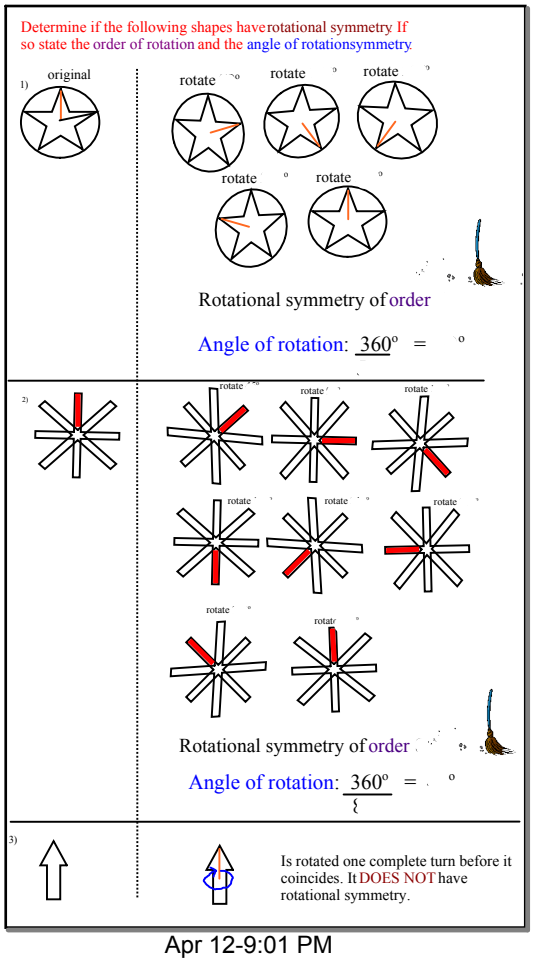
$= 72^\circ$

order = 8

$\angle rot = \frac{360}{8}$

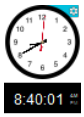
45°

Apr 12-9:01 PM



Apr 12-9:01 PM

Rotational Directions



clockwise

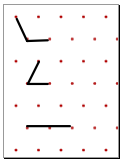
Counter - Clock Wise Rotations

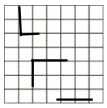
Earth turns counter-clockwise.

Rotations Are Transformations

Text book

- Grid paper will be used to illustrate rotations of 90 (or 180° or 270°)





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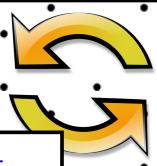
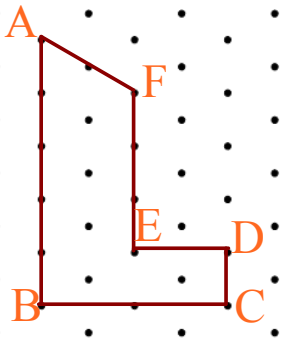
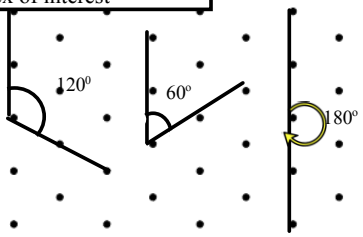
Rotating Images

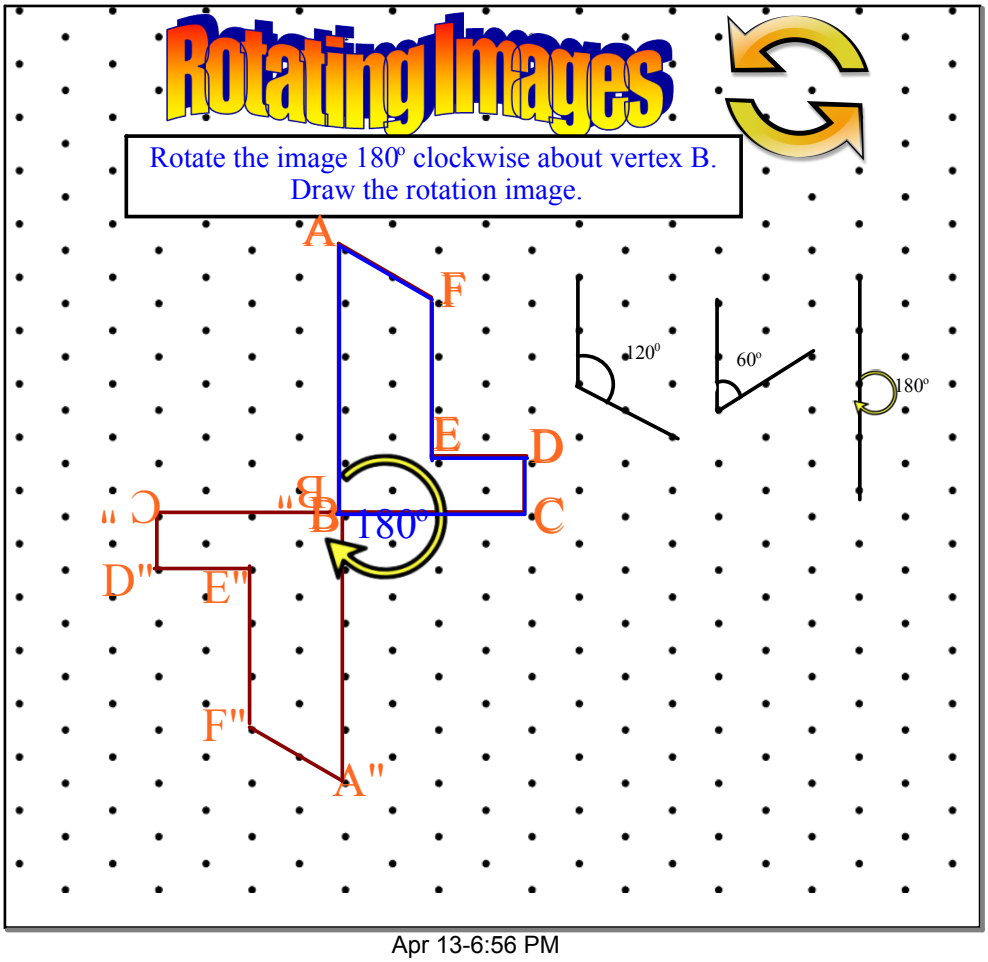


Rotate the image 180º clockwise about vertex B.
Draw the rotation image.
Pick a line connected from the vertex of interest





Apr 13-6:56 PM

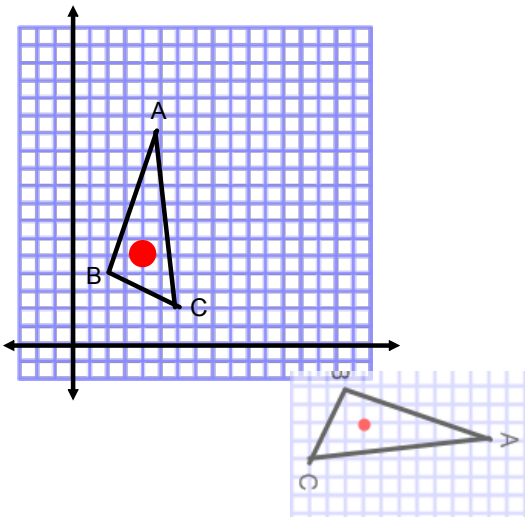


Apr 13-6:56 PM

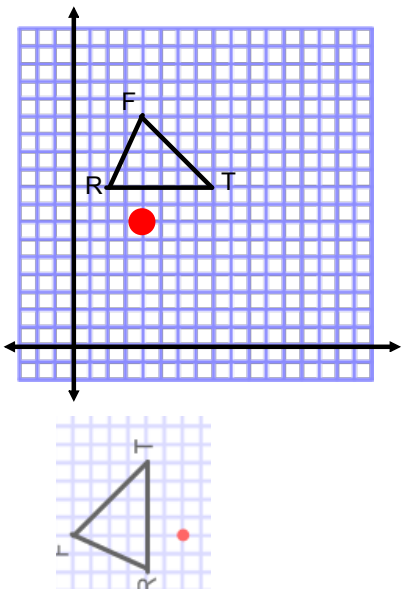
Draw and label the rotated image for each triangle. Label the center of rotation (given in the question)

Step 1) Trace the shape on your own paper and rotate that shape holding your finger or pencil at the rotation center.

1) Rotation 180º counterclockwise, center R(4, 5)



2) Rotation 90º counterclockwise, center R(4, 7)



Apr 19-12:17 PM

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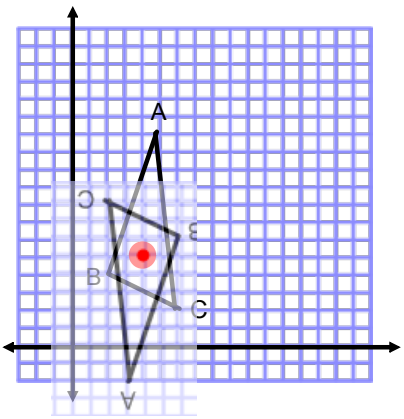

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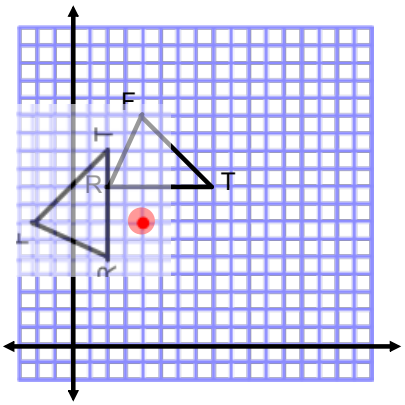
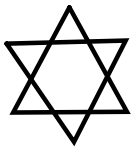


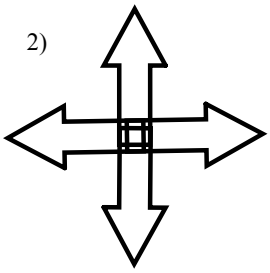
Apr 19-12:17 PM

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

1)



2)



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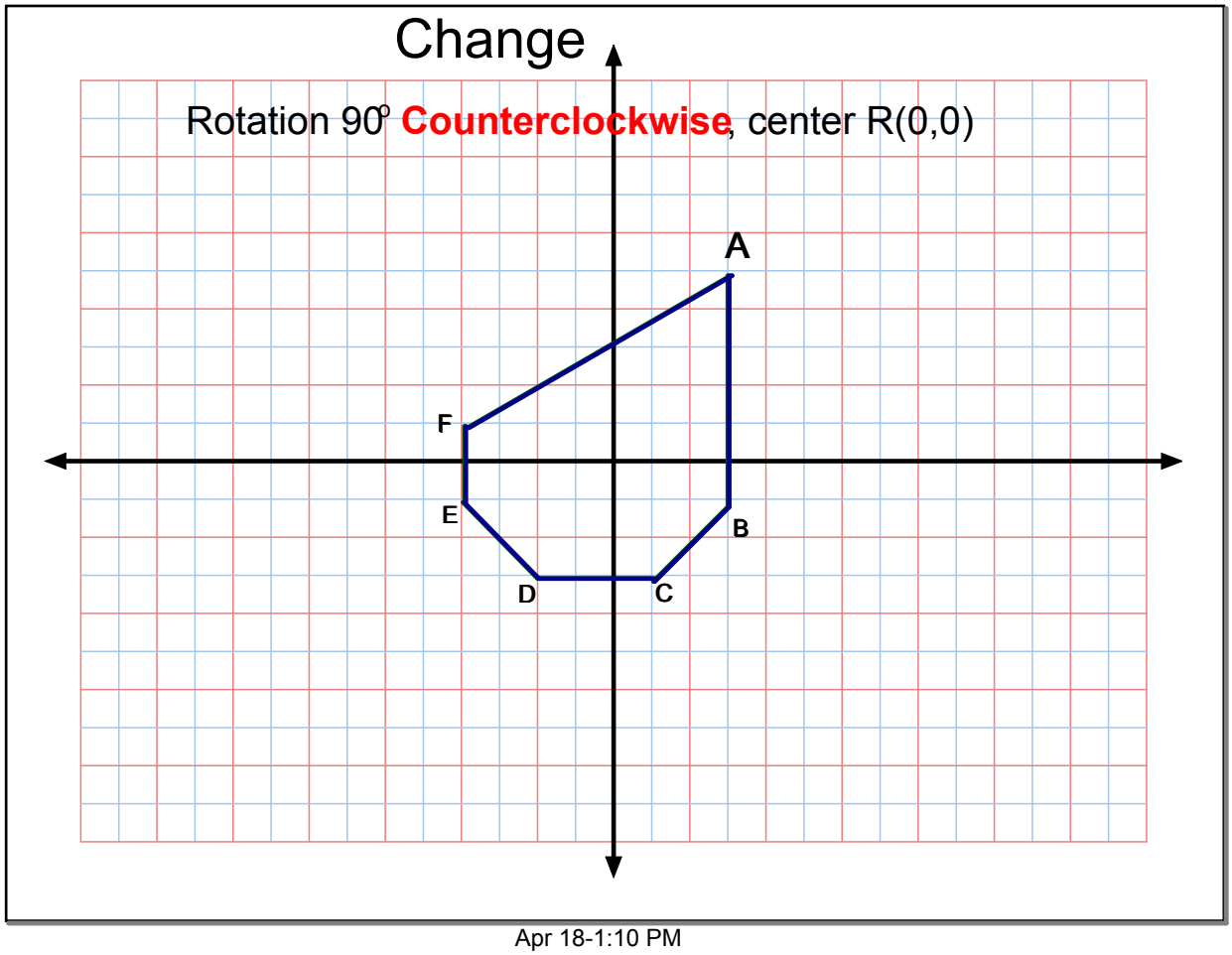
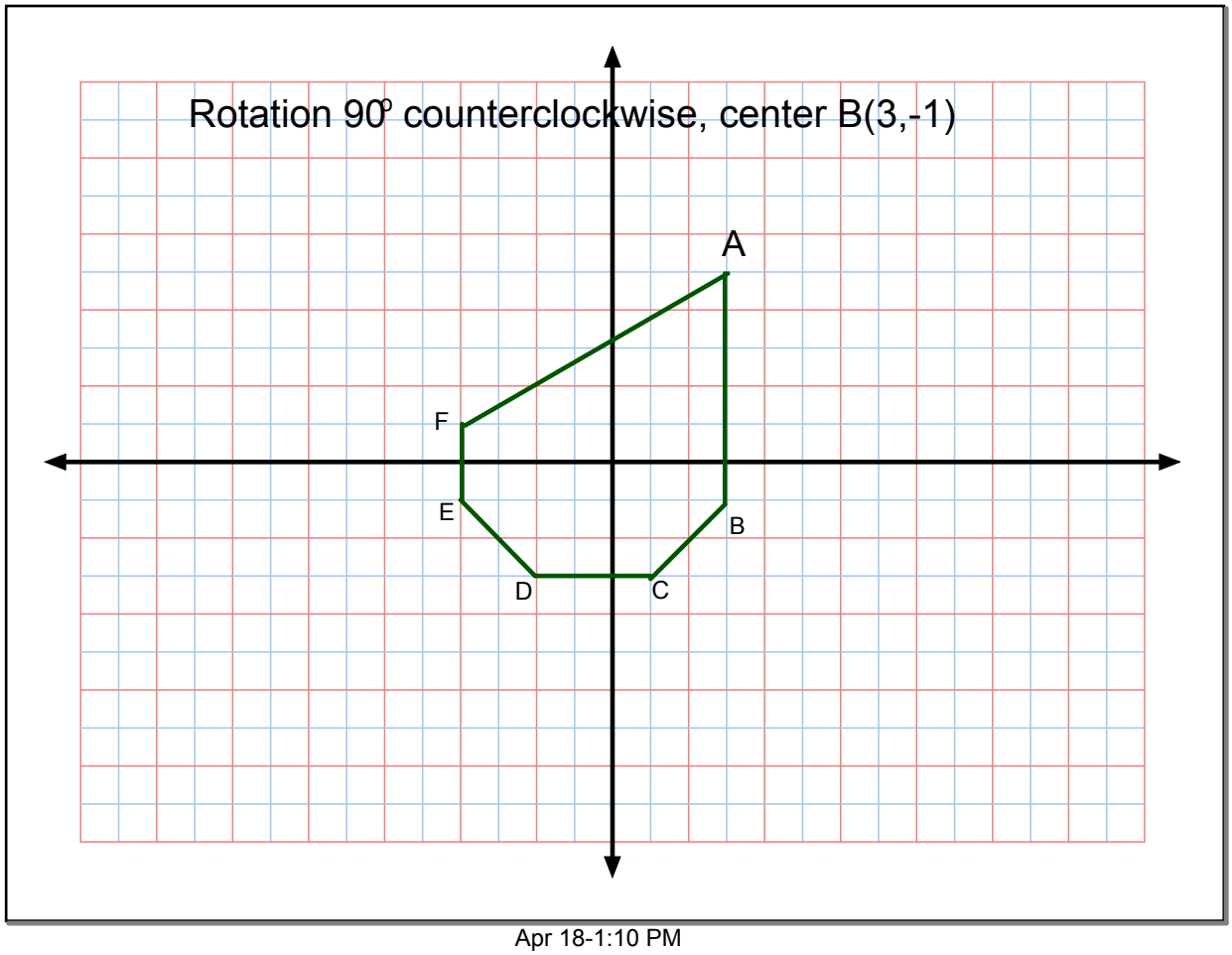


Apr 18-1:10 PM



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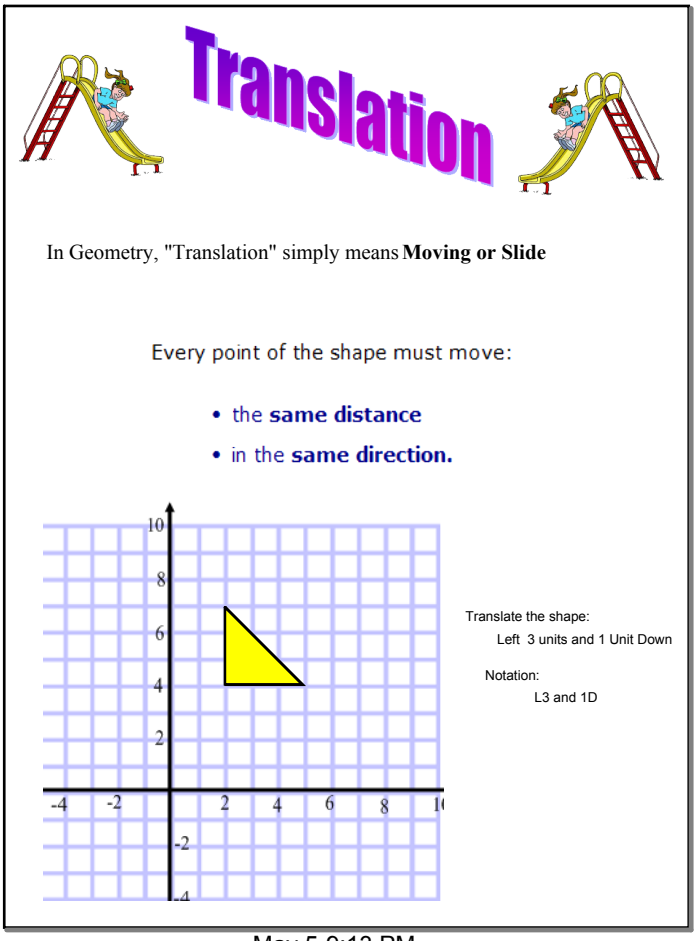
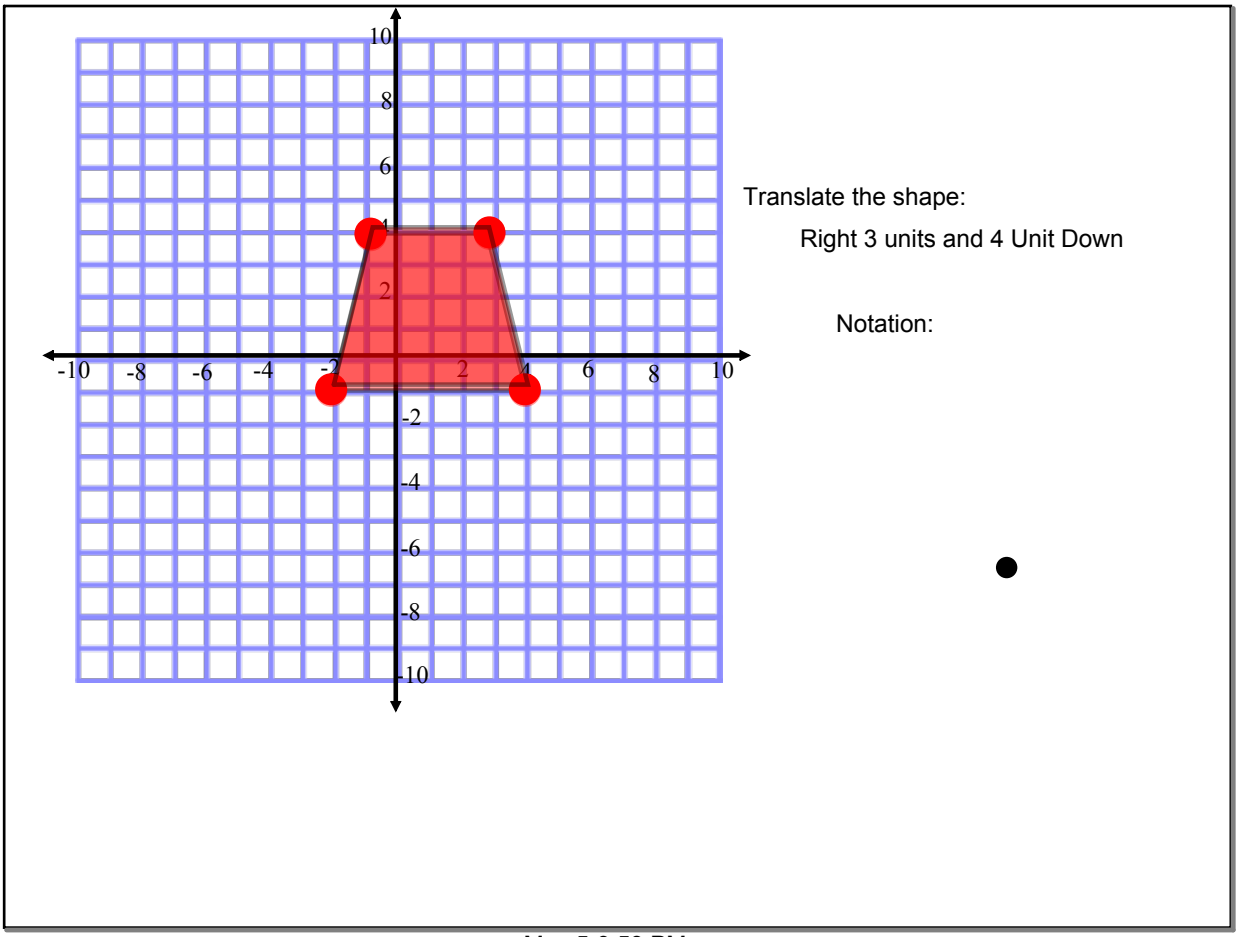


May 5-9:13 PM



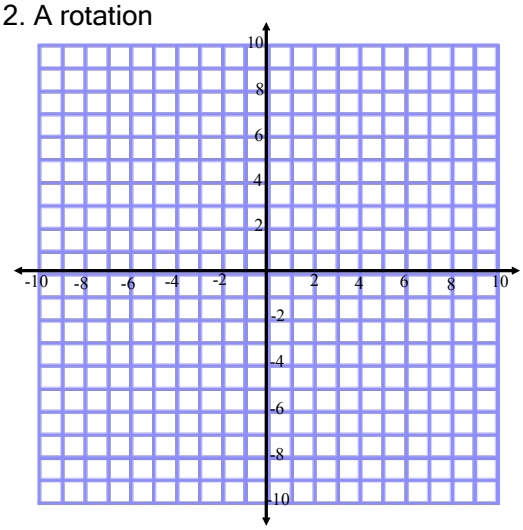
May 5-9:53 PM

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.

2. A rotation of ABC 180 about vertex C



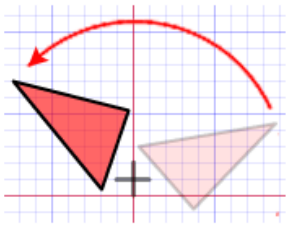
May 5-9:07 PM

There are three types of transformations:

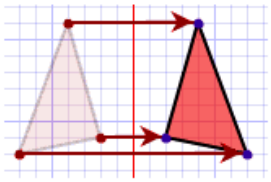
1. reflections [Line of reflection]
   - Reflect through x-axis
   - Reflect through y-axis
   - *oblique two coordinates

2. rotations
   - order of rotation
   - angle of rotation

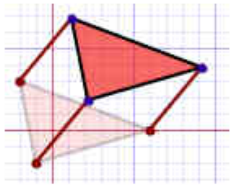
3. translations [slide]
   Left 3 up 2 [L3U2]
   right 4 down2 [R4 D2]



Turn!



Flip!



Slide!

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Class/Homework

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Questions: 4, 5, 6, ~~7~~,8

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

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