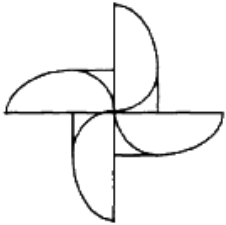


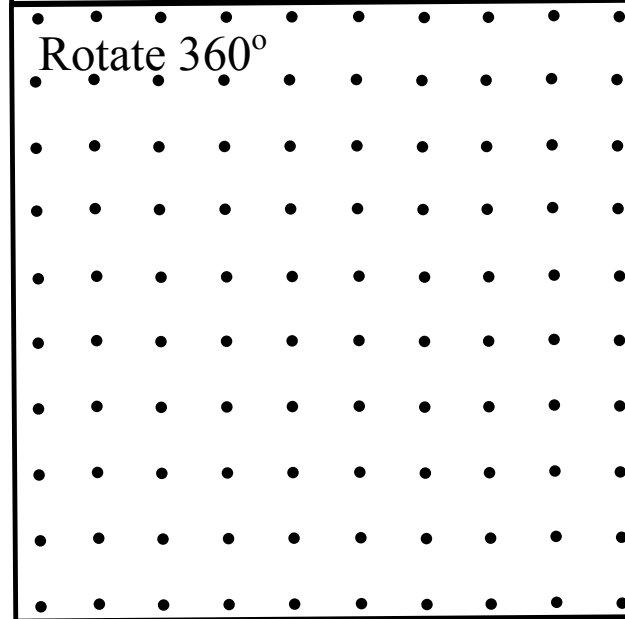
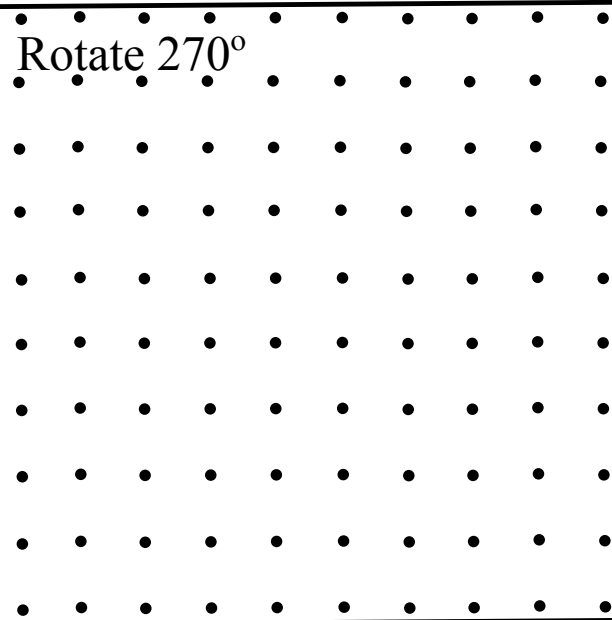
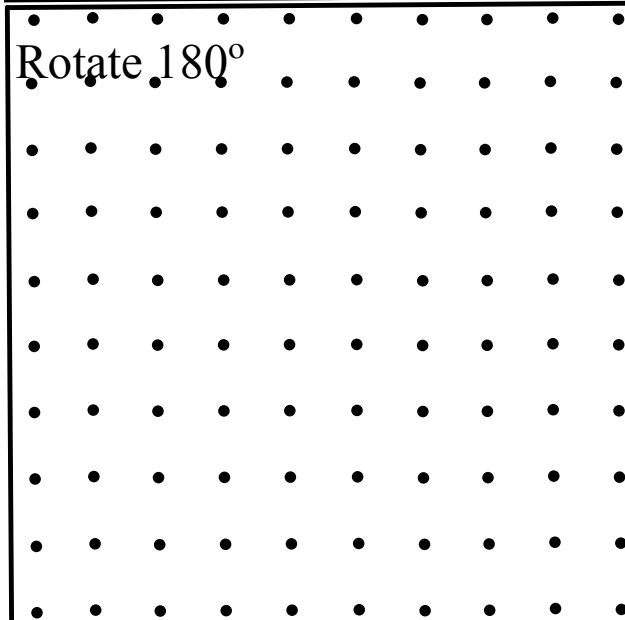
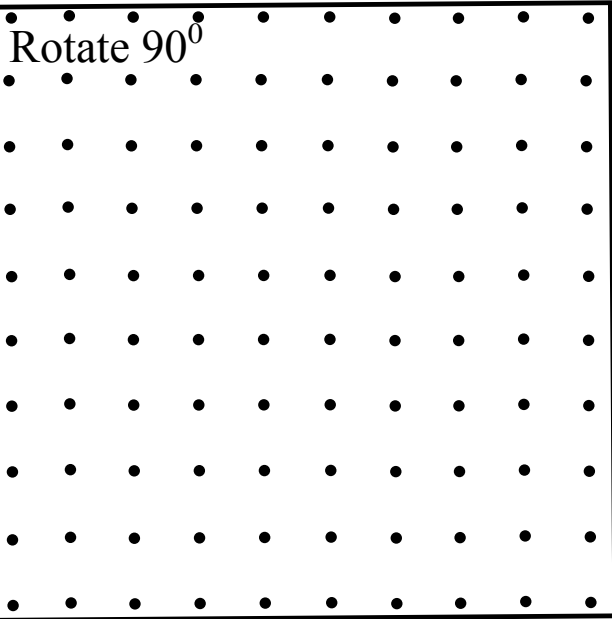
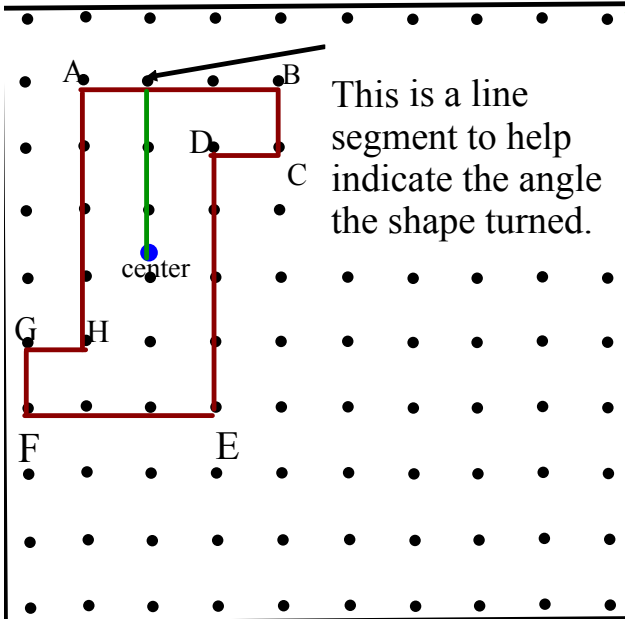
Section 7.6

Rotations & Rotational Symmetry



Lets rotate this object about its center

On your copy draw the rotated figure



Which pictures look like the original?

Lets rotate this object about its center

On your copy draw the rotated figure

	<p>Rotate 90°</p>
<p>Rotate 180°</p>	<p>Rotate 270°</p>
<p>Rotate 360°</p>	<p>Which pictures look like the original? 180° and 360°</p> <p>How many ??? <u>2</u></p> <p>coincides : looks the same as the original</p>

LOOK AT THE NEXT SLIDE THEN COME BACK TO THIS

This object has _____.

Angle of Rotaional Symmetry: _____

= _____

= _____

Rotations

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




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

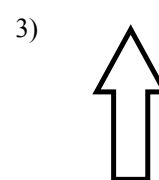
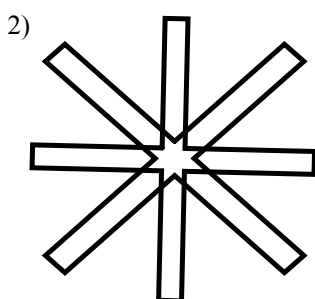
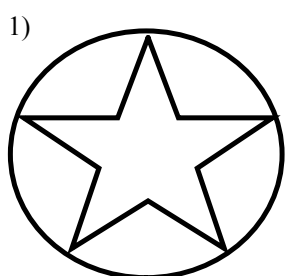
How to state this?
rotational symmetry of order _____

Angle of Rotational Symmetry: $\frac{360^\circ}{\text{the order of rotation}}$

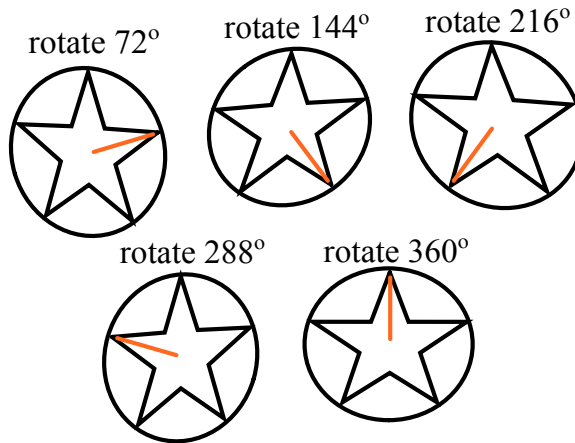
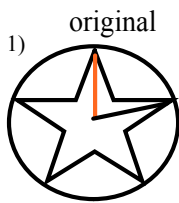
Look at the web book video in rotations

www.mathmakessense.ca


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



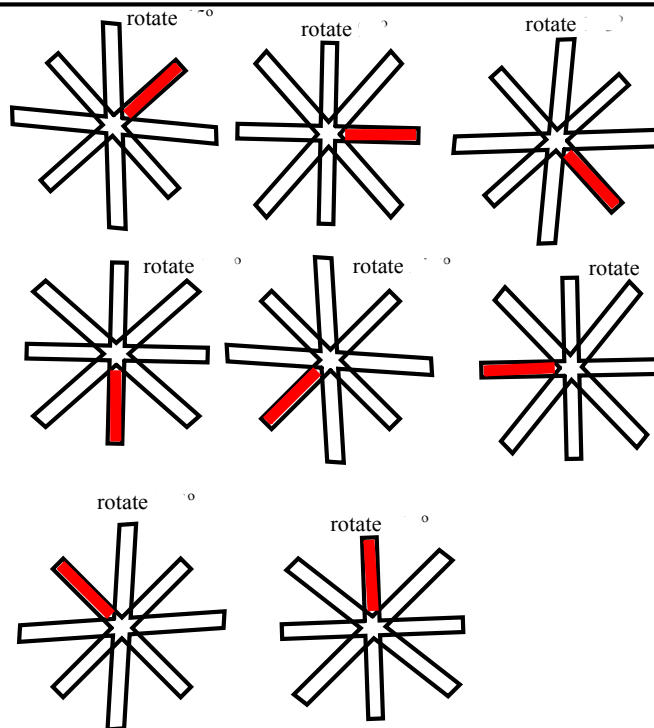
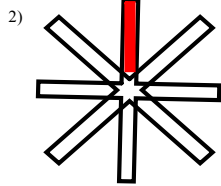
Determine if the following shapes have rotational symmetry. If so state the order of rotation and the angle of rotationsymmetry.



Rotational symmetry of order



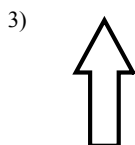
Angle of rotation: $\frac{360^\circ}{5} = 72^\circ$



Rotational symmetry of order



Angle of rotation: $\frac{360^\circ}{8} = 45^\circ$



Is rotated one complete turn before it coincides. It **DOES NOT** have rotational symmetry.

Rotational Directions



clockwise



Counter - Clock Wise Rotations



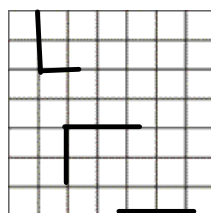
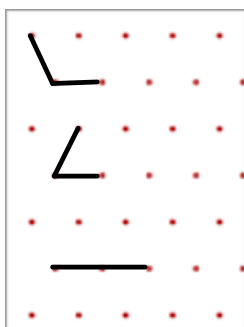
Earth turns counter-clockwise.

Rotations Are Transformations



Text book

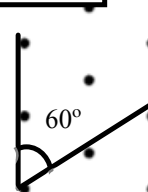
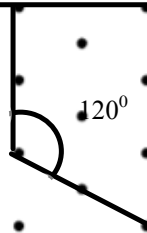
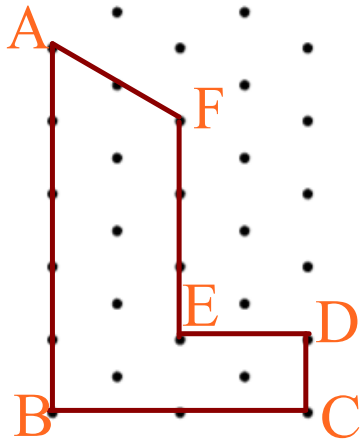
- Dot paper will be used to illustrate rotations of 60° (or 120° or 180°)
- Grid paper will be used to illustrate rotations of 90° (or 180° or 270°)



Rotating Images



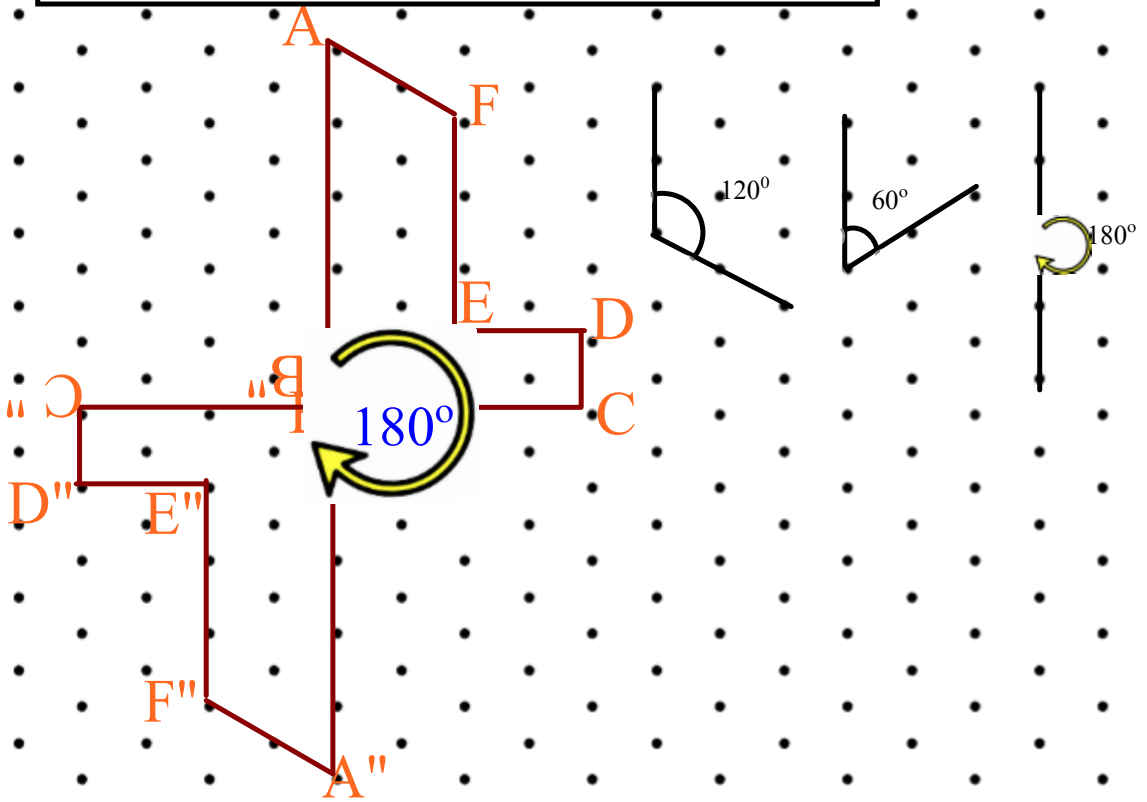
Rotate the image 180° clockwise about vertex B.
Draw the rotation image.
Pick a line connected from the vertex of interest



Rotating Images



Rotate the image 180° clockwise about vertex B.
Draw the rotation image.



Your Turn

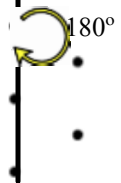
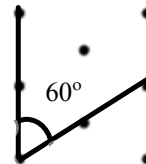
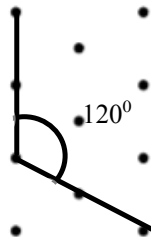
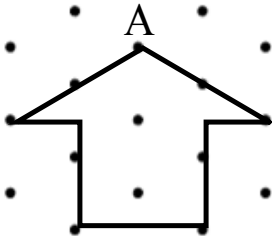
Rotating Images



Rotate the image 60° counter-clockwise about vertex A.

Draw the rotation image.

Pick a line connected from the vertex of interest Use protractor to help



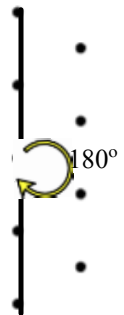
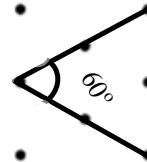
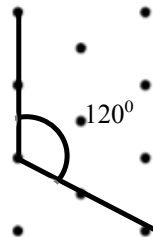
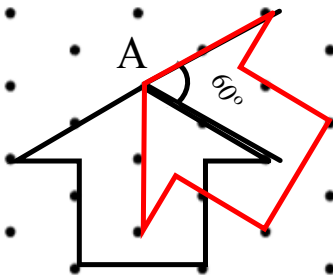
Your Turn

Rotating Images



Rotate the image 60° counter-clockwise about vertex A.
Draw the rotation image.

Use protractor to help



Class/Homework

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