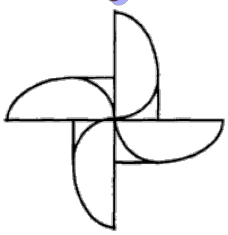
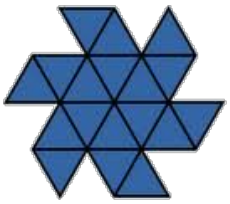
Section 7.6



Rotations & Rotational Symmetry

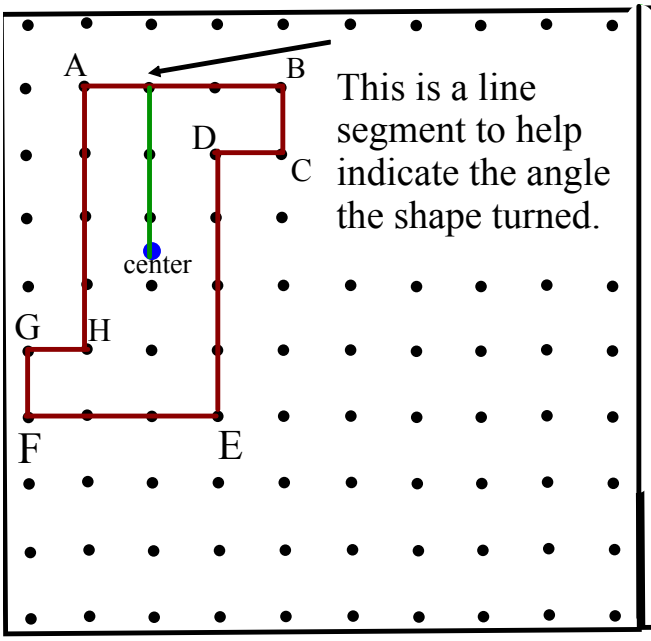
Click

Click



Lets rotate this object about its center

On your copy draw the rotated figure



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

Rotate 90^0

Rotate 180^o

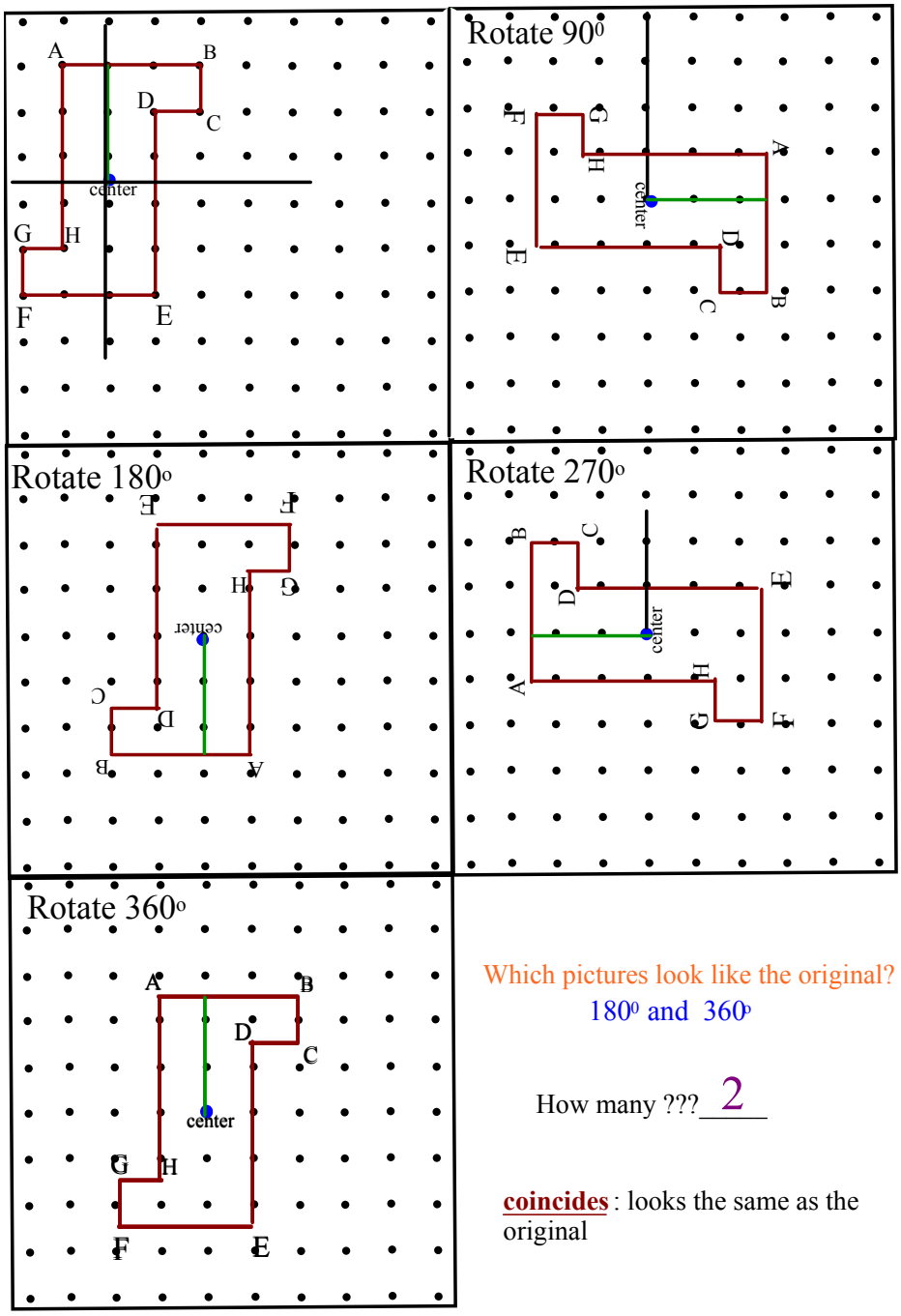
Rotate 270^o

Rotate 360^o

Which pictures look like the original?

Lets rotate this object about its center

On your copy draw the rotated figure



Which pictures look like the original?

180⁰ and 360⁰

How many ??? 2

coincides : looks the same as the original

LOOK AT THE NEXT SLIDE THEN COME BACK TO THIS

This object has _____ 2 _____.

Angle of Rotaional Symmetry $\frac{360^o}{\text{the order of rotation}}$

$$= \frac{360^o}{2}$$

$$= 180^0$$

Rotations

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

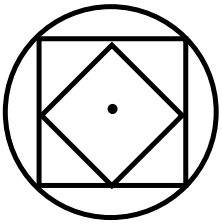
Order of Rotation is the number of times a shape coinsides with itself during a 360° rotation

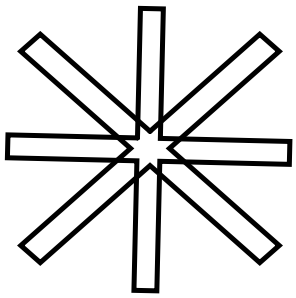
How to state this?
rotational symmetry of order___

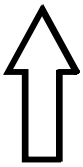
Angle of Rotational Symmetry $\frac{360^\circ}{\text{the order of rotation}}$

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 rotationsymmetry.

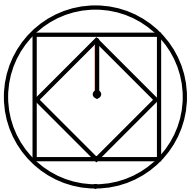
1) 

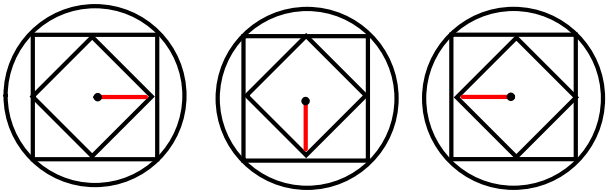
2) 

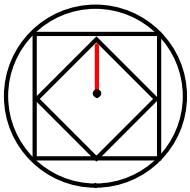
3) 

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

1) original



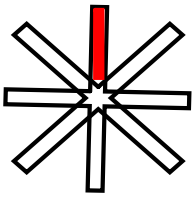


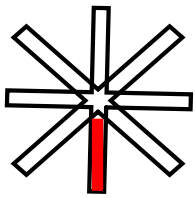


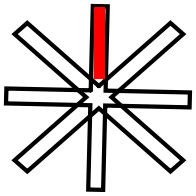
$$\frac{360}{4}=90°$$

Rotational symmetry of order 4

2)







Rotational symmetry of order 2

$$\frac{360}{2}=180°$$

3)

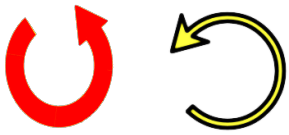
Rotational symmetry of order 1

$$\frac{360}{1}=360°$$

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 60º (or 120º or 180º)

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