Math 9 *Name:* _____

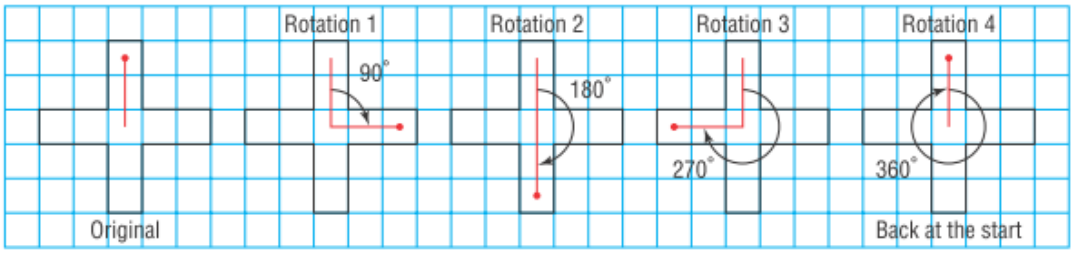
7.5 – Rotational Symmetry *Date:* _____

Shapes can be rotated _____ or _____.

A shape has ***ROTATIONAL SYMMETRY*** if it matches up with itself after a rotation of less than $360°$.

The ***NUMBER*** of times a shape matches up with itself during ***ONE ROTATION*** is called the ***ORDER OF ROTATION***.

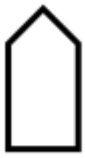
The ***ANGLE OF ROTATIONAL SYMMETRY*** = $\dfrac{360°}{Order\ of\ Rotation}$



The Cross matches up with itself ____ times during one complete turn (a rotation of _____°).

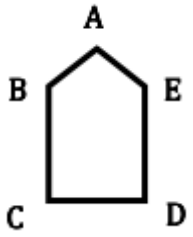
The ***angle of rotational symmetry*** =

Ex. 1: Determine the ***Order of Rotation*** and the ***Angle of Rotational Symmetry*** for each of the shapes below.

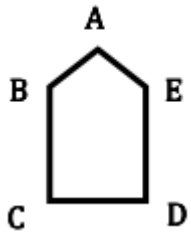


Ex. 2: Rotate the shapes through the angles and directions given below.

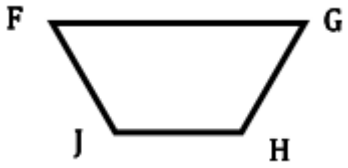
$90°$ **Clockwise about point *D*.**



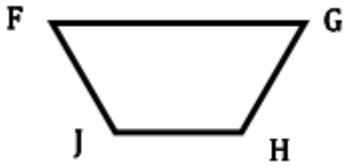
$180°$ **Counter-clockwise about point *C*.**



$90°$ **Counter-clockwise about point *J*.**



$180°$ **Clockwise about point *H*.**



Ex. 3: Rotate Rectangle *ABCD* as described below:

a. $90°$ Clockwise about vertex *A*.

b. $180°$ Clockwise about vertex *A*.

c. $270°$ Clockwise about vertex *A*.

What is the ***Rotational Symmetry*** of the resulting shape?