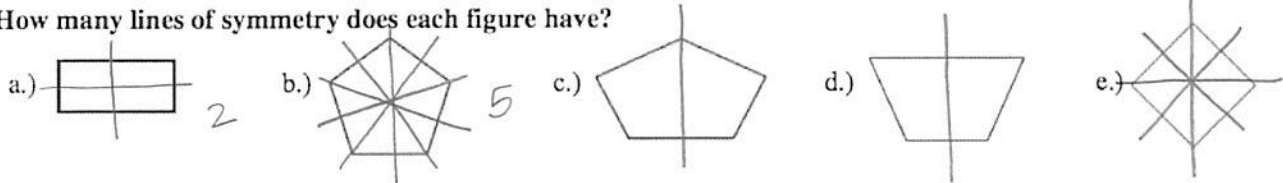Name __Key__   Hr _____

Geometry Lesson 9-6: Identify Symmetry

Learning Target: By the end of today's lesson we will be able to successfully identify line and rotational symmetries of a figure.

Ex 1: How many lines of symmetry does each figure have?

a.)   2   b.)   5   c.)   d.)   e.)

***Notice that the lines of symmetry are also lines of __lines of reflection__ .

Rotational Symmetry:
A figure in a plane has rotational symmetry if the figure can be mapped onto itself by a __rotation__ of 180° or less about the __center__ of the figure.

For a figure with "s" symmetry lines, the ***smallest degree*** of rotation that maps the figure onto itself is:

$$\frac{360°}{s} = Smallest\ Degree\ of\ Rotational\ Symmetry$$

Ex 2:

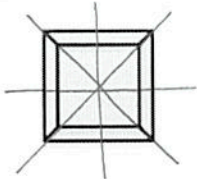| Figure Draw ALL Symmetry Lines	# of Symmetry Lines	Smallest Degree of Rotational Symmetry?	Rotational Symmetry? Y or N?	If yes, what are other degrees of rotation?
Square	4	$\frac{360}{4} = 90°$	Yes	90° 180°
	2	$\frac{360}{2} = 180°$	Yes	180°
	5	$\frac{360}{5} = 72°$	Yes	72° 144°
Regular	3	$\frac{360}{3} = 120°$	Yes	120°

Figure Draw ALL Symmetry Lines	# of Symmetry Lines	Smallest Degree of Rotational Symmetry?	Rotational Symmetry? Y or N?	If yes, what are other degrees of rotation?
	4	$\dfrac{360}{4} = 90°$	Y	$90°, 180°$
	8	$\dfrac{360}{8} = 45°$	Y	$45°, 90°, 135°, 180°$
	2	$\dfrac{360}{2} = 180°$	Y	$180°$
	0	$\dfrac{360}{0} = $ N/A	N	
	4	$\dfrac{360}{4} = 90°$	Y	$90°, 180°$

Ex 3: Does the figure have the rotational symmetry shown?
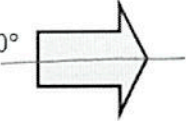If not, does the figure have any rotational symmetry?

***

a) 135°

$\dfrac{360}{4} = 90°, 180°$

No rotational symmetry of 135° because 135 is not a factor of 90°.

b) 180°

$\dfrac{360}{1} = 360$

No rotational symmetry of 180°

No rotational symmetry at all.