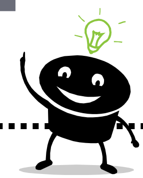


Name ____

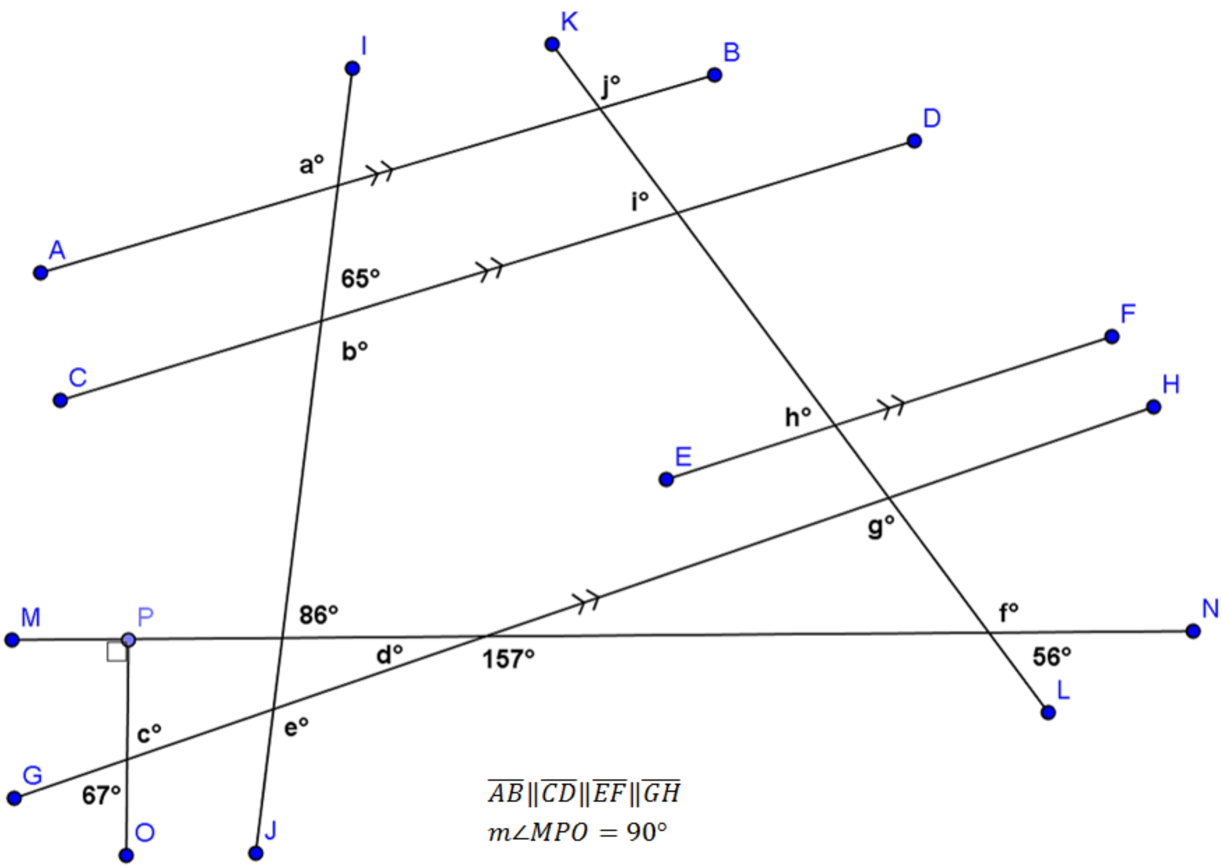
Lesson 14: Transformations/Rigid Motion

LEARNING TARGET

I CAN <u>define</u> basic rigid motions.

<u>Warm Up</u>

Find the measure of each lettered angle in the figure below.



$\overline{AB} \parallel \overline{CD} \parallel \overline{EF} \parallel \overline{GH}$

$m\angle MPO = 90°$

a =	b =	c =	d =	e =
f =	g =	h =	i =	j =

Mini Lesson

Basic Rigid Motion:

Explaining how to transform figures without the benefit of a coordinate plane can be difficult without some important vocabulary.

Let's review:

The word transformation has a specific meaning in geometry. A transformation F of the plane is a function that assigns to each point P of the plane a unique point $F(P)$ in the plane.

Transformations that preserve lengths of segments and measures of angles are called ______________________________________. (Distance preserving and angle preserving)

A dilation is an example of a transformation that preserves ____________________ measures but not the lengths of segments. Currently, we will be working with only rigid transformations.

We call a figure that is about to undergo a transformation the ____________________ while the figure that has undergone the transformation is called the _________________________.

Pre-image   image

Is a ______________________________

Is a ______________________________

Is a ______________________________

A line of reflection acts as the ____ of each segment that joins a given vertex of the pre-image with the respective image vertex of the image. When we rotate an image we rotate ____. The point of the intersection of two perpendicular bisectors is the _________________________ of _________________________________.

Let's find the center of rotation:
Ex 1:
Steps:

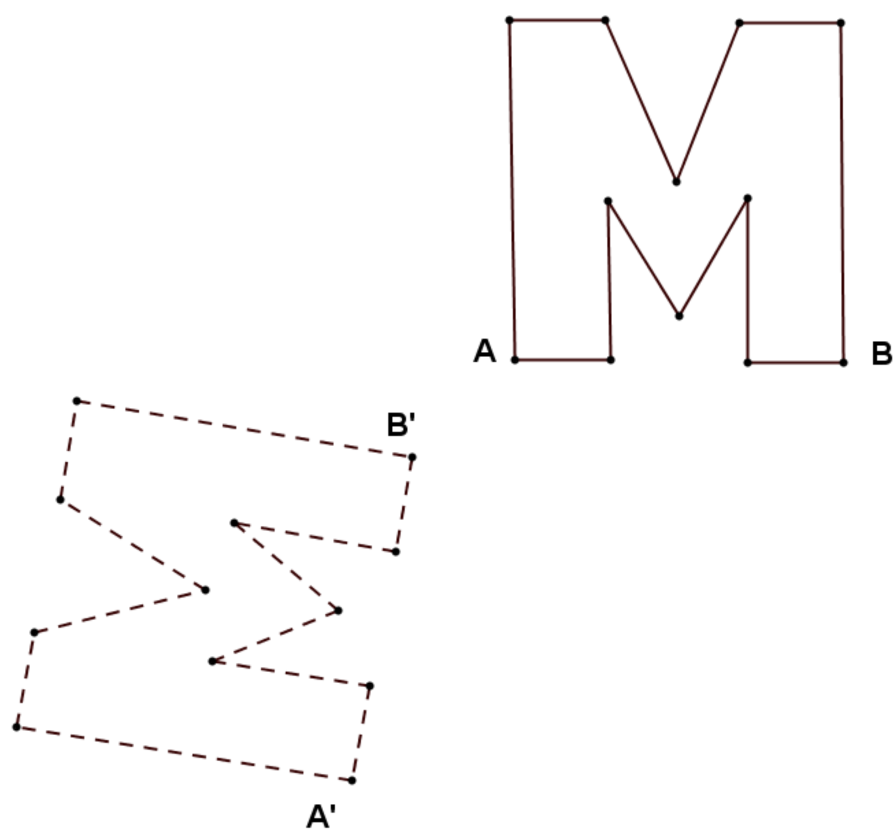
a. Draw a segment connecting points A and A'.

b. Using a compass and straightedge, find the perpendicular bisector of this segment.

c. Draw a segment connecting points B and B'.

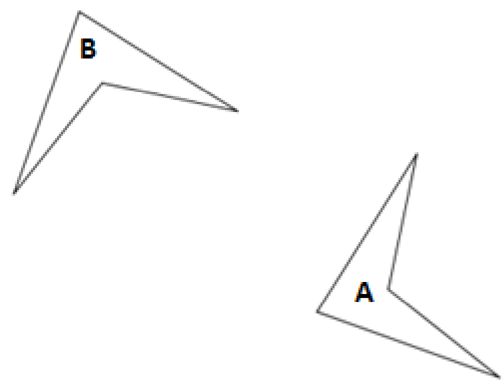
d. Find the perpendicular bisector of this segment.

e. The point of intersection of the two perpendicular bisectors is the center of rotation. Label this point P.

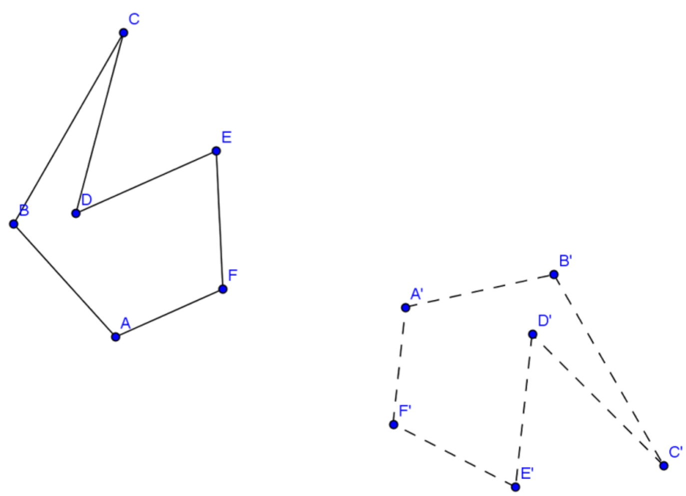


Work Time: Find the center of rotation

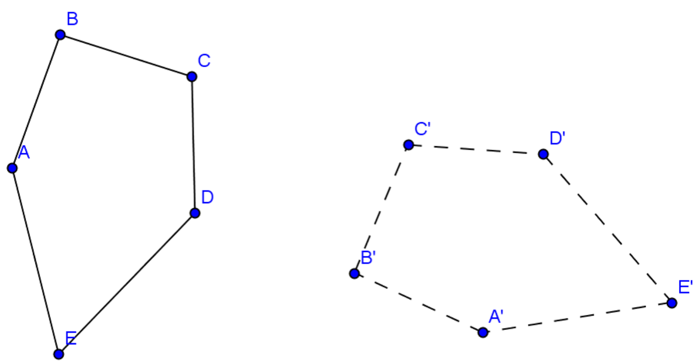
Ex 1:



Ex 2:



Ex 3:

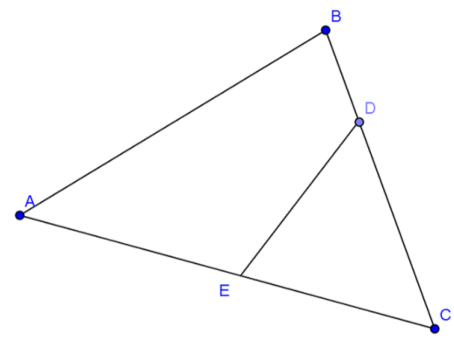


Name ____ Classwork/Homework

Lesson 14: Transformations/Rigid Motions

Given: $m\angle CDE = m\angle BAC$

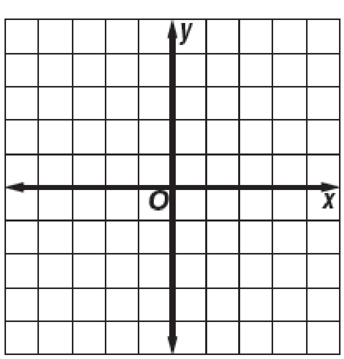
Prove: $m\angle DEC = m\angle ABC$



Statement	Reason

2. Reflect each.

a. $\triangle ABC$ with vertices $A(-3, 2)$, $B(0, 1)$, and $C(-2, -3)$ in the line $y = x$



b. trapezoid $DEFG$ with vertices $D(0, -3)$, $E(1, 3)$, $F(3, 3)$, and $G(4, -3)$ in the y-axis