Name: _____ Date: _____

UNIT 1A **LESSON 6**

AIM: HOW DO WE CONSTRUCT A PERPENDICULAR BISECTOR?

Do Now:

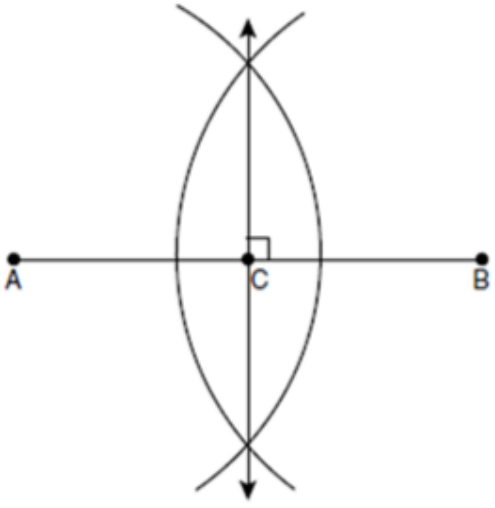
1. Ray $\overrightarrow{BC}$ bisects $\angle ABD$. If $m\angle ABD$ is 60°, Find the $m\angle ABC$ and $m\angle CBD$. Draw a diagram to assist in the problem.

2. How would you define a perpendicular bisector? Provide a sketch.

PERPENDICULAR BISECTORS!

STEPS	C ONSTRUCTION
1. Place the compass on one point of the line segment and adjust the compass to just over half the line length. 2. Without adjusting the compass width, draw an arc on each side of the line. 3. Repeat from the other endpoint of the line. **YOU SHOULD SEE 2 POINTS OF INTERSECTION!** 4. Using your straight edge, connect a line through the two points of intersection	

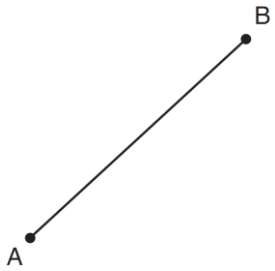
CONCLUSIONS:



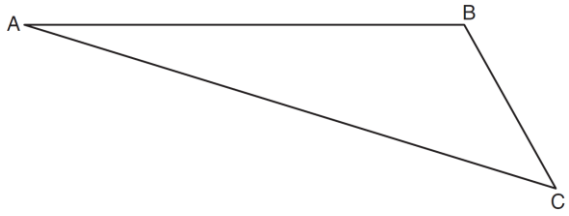
WHEN IN DOUBT, DRAW THE TROUT!

PRACTICE:

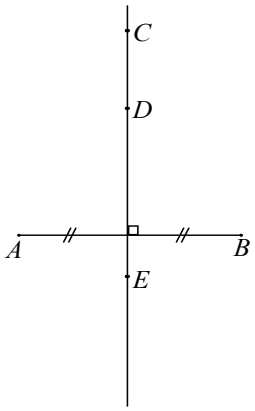
1. Using a compass and straightedge, construct the perpendicular bisector of $\overline{AB}$ shown below. Show all construction marks.



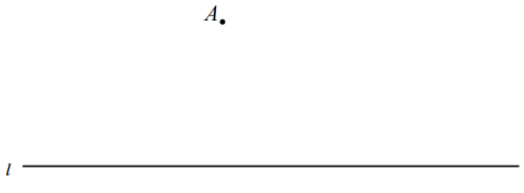
2. On the diagram of ΔABC shown below, use a compass and straightedge to construct the perpendicular bisector of $\overline{AC}$. [Leave all construction marks.]



3. Now that you are familiar with the construction of a perpendicular bisector, we must make one last observation. Using your compass, or a ruler, identify which pairs of segments are equal.

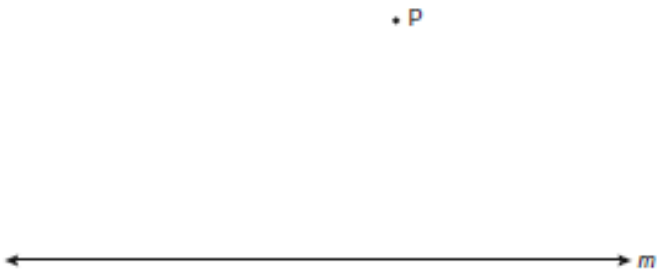


WHAT IF THE PERPENDICULAR BISECOTR IS TO BE CONSTRUCTED THROUGH A SPECIFIC POINT? *SEMI-CIRCLE!*

ON THE LINE	ABOVE THE LINE
	

4. Construct a perpendicular bisector to a line ℓ from a point A not on ℓ.

5. Using a compass and straightedge, construct a line perpendicular to m through point *P*. [Leave all construction marks.]



6. Using a compass and straightedge, construct a line perpendicular to $\overline{AB}$ through point *P*. [Leave all construction marks.]

7. Using a compass and straightedge, construct a line perpendicular to $\overline{AB}$ through point *P*. [Leave all construction marks.]