Geometry Local Lomac 2015-2016   Date 2/5   due 2/8   **Construct Perpendicular** | **8.5L**
                                                                  Bisectors: |

☐ **DO NOW –** On the back of this packet

Name _____

    LO: I can construct a perpendicular bisector.

☐ **(1)** **Constructing Perpendicular Bisectors:**

compass
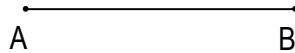   ☐ (a) Obtain "C4 Perpendicular Bisectors"

    ☐ (b) Use the steps to complete problem (2) "Constructing Perpendicular Bisectors"

☐ **(2)** **Constructing Perpendicular Bisectors:**

compass
highlighters

Construct the perpendicular bisector for each segment below. Label the intersection of the arcs W and X for the first perpendicular bisector and the Y and Z for the second one.

A ●————————● B

E ●

F ●

Connect W to A and W to B. Is W equidistant from points A and B? _____ How do you

know?_____What type of triangle is

△AWB? _____

Is X equidistant from points A and B? _____ How do you know?_____

_____What type of triangle is △AXB? _____

☐ **(3)** **Constructing Perpendicular Bisectors continued:**
continued

Construct a line perpendicular to line ℓ that passes through point A. (see diagram below)

THINK: (a) Will point A be on the perpendicular line that you are constructing? _____ because _____

_____

(b) Are the points on a perpendicular bisector of a segment equidistant from the endpoints of the

segment? _____

(c) How can you use your compass to construct 2 points on the line that are equidistant from point A?

_____ Do this and label the points C and D.

(d) Make two more circles/arcs centered at _____ and _____ to construct the perpendicular bisector of

$\overline{CD}$.

(e) Does the perpendicular bisector of $\overline{CD}$ also bisect the line? _____ because_____

_____

(f) Is the perpendicular bisector of the segment also perpendicular to the line? _____ because _____

_____

$A_{\bullet}$

ℓ

☐ **(4)** **Exit Ticket**

ON THE LAST PAGE

☐ (5)   **Homework**
compass

(1) Constructing Perpendicular Bisectors. COMPLETE PARTS (a) THROUGH (k)

Use 4 different colors for the constructions below, 1 for each radius measure. Shade the boxes under the word "color" with the pencil/marker you use for that part of the construction.

☐ (a) With a regular pencil, connect the 2 points below to make $\overline{AB}$.
☐ (b) Highlight (pink) and measure the first segment below with your compass
☐ (c) Construct circle A (the center is A) and circle B with the radius you measured.
☐ (d) With a dot, mark the point(s) where the two circles intersect.
☐ (e) Repeat steps a-d for the other 3 radius lengths.
    (Remember highlight each radius with a different color)

•
A

•
B

☐ (5)   **Homework**
cont.
compass

☐ (f) Label the points Q, R, S, T, U, V, W and X from top to bottom. Is point Q the same distance from A as it is

from B? _____ because_____.

☐ (g) Is point R the same distance from A as it is from B? _____ because _____

_____

☐ (h) What about the other points, are they the same distance from A and B?_____ because_____

_____

☐ (i) Connect all of the points 1 through 8. What shape did you make when you connected them? _____

☐ (j) You have just constructed the _____ _____ for

line segment AB. This is also the set of points, equidistant from points A and B.

☐ (k) The smallest number of circles you must draw to construct the perpendicular bisector is _____ because

_____

Divide $\overline{AB}$ into 4 congruent segments.
       (Hint: construct the perpendicular bisector of $\overline{AB}$ and then construct 2 more perpendicular bisectors.)

A B
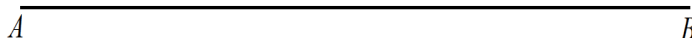
Exit Ticket   Name_____ **Date** _____ _____ **Per**_ _____   **8.5L**

(1) The LO (Learning Outcomes) are written below your name on the front of this packet. Demonstrate your achievement of these outcomes by doing the following:

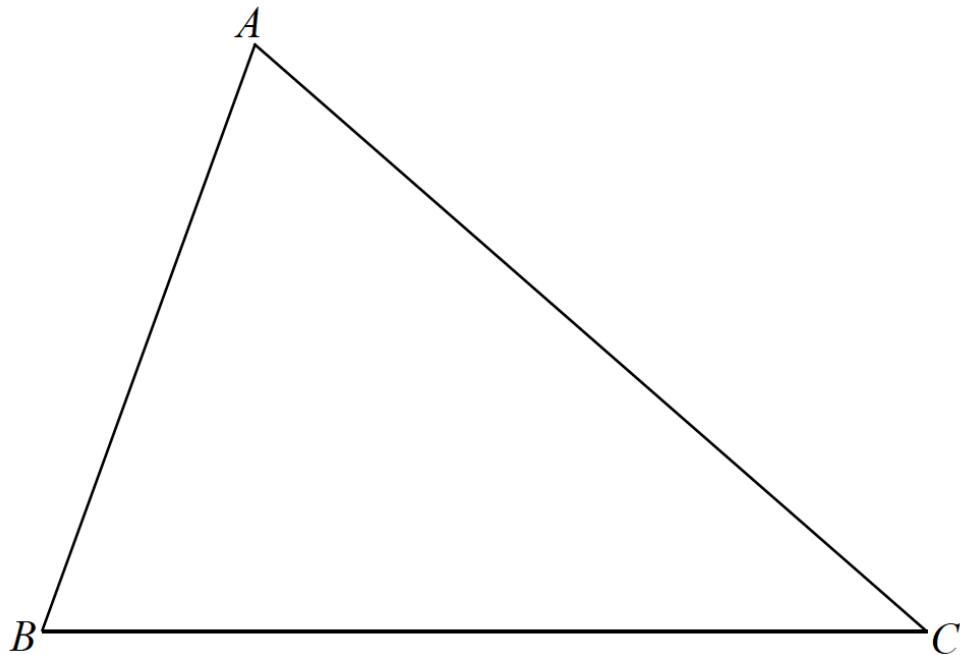DO: Construct the perpendicular bisector of $\overline{AB}$

BONUS: Construct the perpendicular bisectors of $\overline{BC}$, and $\overline{CA}$ on the triangle below. After you have constructed all 3 bisectors, describe what you notice about them. (If you want to reduce confusion, highlight each set of circles/arcs and perpendicular bisector with a different color.)

_____

_____

_____

_____

DO NOW   **Name**_____ **Date** _____ **Per**_____   **8.5L**

(1) Use your notes to help you draw:

   (a) ∠HOT adjacent to ∠POT (Remember, each letter can only appear ONCE in your diagram. See notes for the meaning of "adjacent".)

   (b) Complete the statement: A compass is powerful because _____

_____

(2) Describe why the cartoon below is supposed to make people smile. REALLY think about it.