**Geometry Regents Lomac 2015-2016**    Date 9/24   due 9/25    **Construct Perpendicular Bisectors:** | **1.6R**

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

**Name** _____

**LO:** I can bisect an angle by folding paper or using a compass and straightedge and explain how the process bisects the angle.

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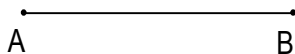☐ **(1)**   **Constructing Perpendicular Bisectors:**

angle diagrams

☐ (a) Obtain "C4 Perpendicular Bisectors", a diagrams page, scissors, and tape or glue

☐ (b) Cut out the column of diagrams and match them with the step descriptions on the construction notes page

☐ (c) Try to complete the "What this does" section of the notes as well as you can.  We will check this together.

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

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☐ **(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 $\ell$ 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 _____

_____

$A_{\bullet}$

$\ell$ _____

☐ **(4)**   **Exit Ticket**

ON THE LAST PAGE

☐ (5)    **Homework**

(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

4

1.6R

☐ (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_ _____                    1.6R**

(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:

Construct the perpendicular bisector of $\overline{AB}$, $\overline{BC}$, 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.)

_____

_____

_____

_____

$A$

$B$                                                                                                                   $C$
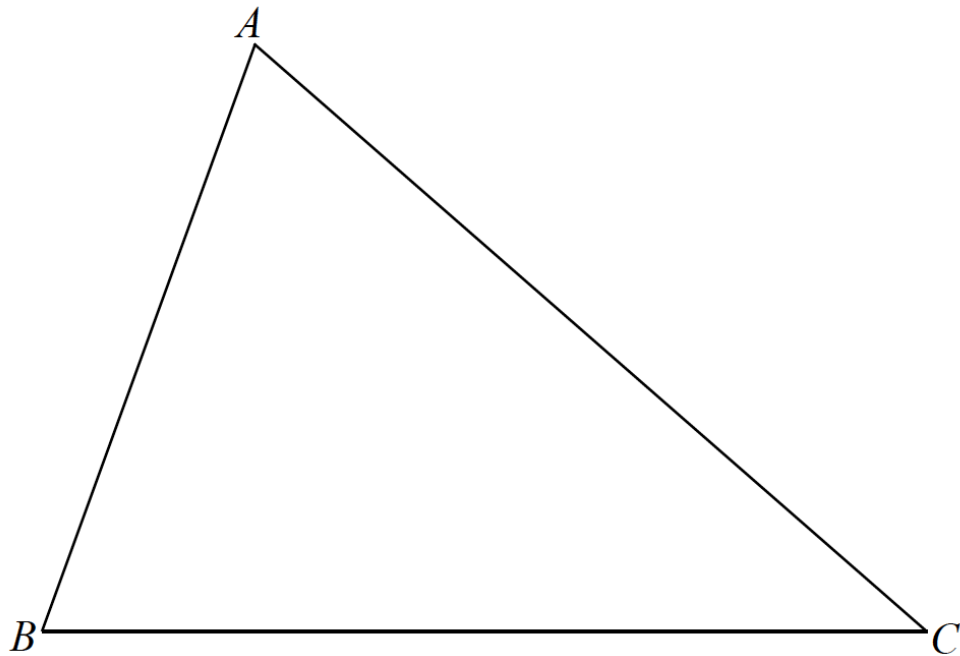
**DO NOW**     **Name**_____ **Date** _____ **Per**_____            **1.6R**

(1) Use your notes to help you draw:

    (a) ∠HOT adjacent to ∠POT (Remember, each letter can only appear ONCE in your diagram.)

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

_____

(this was in a lesson AND on the quiz)

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