Geometry CC 1.2 – Perpendicular bisector
Vocabulary
Midpoint – divides a line segment into two congruent segments.
Segment bisector – a line intersecting a line segment at its midpoint.
Right angle – an angle measuring $90°$.
Perpendicular – lines intersecting to form right angles ($90°$ angles).
Equidistant – a point is equidistant when it's equal distance from two or more things.
Perpendicular bisector – line or line segment perpendicular to a line segment and passing through its midpoint.

1. Construct the perpendicular bisector of segment $\overline{RT}$. The **perpendicular bisector** of $\overline{RT}$ is a line perpendicular to $\overline{RT}$ and passing through the midpoint of $\overline{RT}$.

R   T
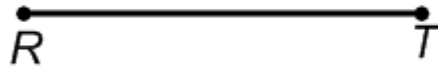
2. In the diagram below, $\overline{CE}$ is the perpendicular bisector of $\overline{AB}$.
Using your compass, examine the following pairs of segments:

     a.   AC and BC

     b.   AD and BD

     c.   AE and BE
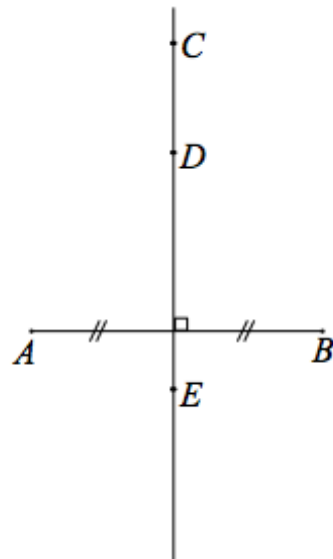
*Based on your findings, fill in the observation below:*

Any point on the perpendicular bisector of a line segment is _____ from the endpoints of the line segment.

3. Using the diagram $\triangle KLJ$ with $\overline{KM} \cong \overline{LM}$;
   a. describe $\overline{JM}$
   b. describe the relationship between $\overline{KJ}$ and $\overline{LJ}$.
   c. what conclusion can you make about $\triangle KLJ$ in the figure below? Explain
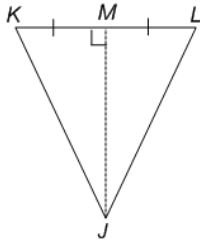
4. The diagram below shows the location of two neighboring houses. Tom and Amy wish to erect a fence that will be equidistant from their respective houses. Using a compass and a straightedge, draw the fence line.
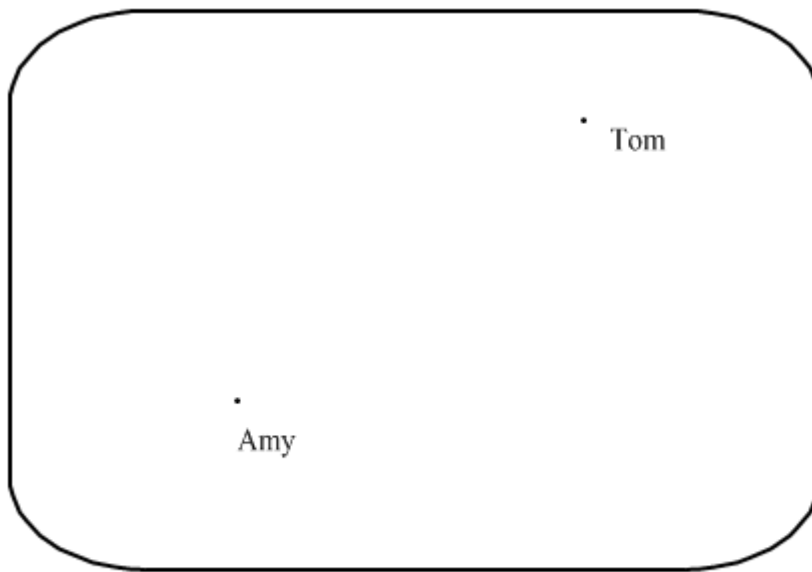
5. Construct the perpendicular bisectors of $\overline{AB}$, $\overline{BC}$, and $\overline{CA}$ on the triangle below. What do you notice about the segments you have constructed?