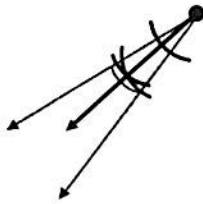


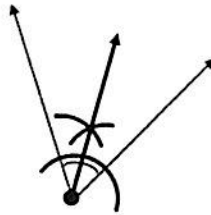
HW Answers 2.4

Bisect each angle below.

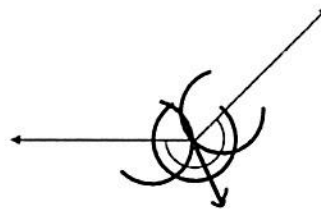
1.



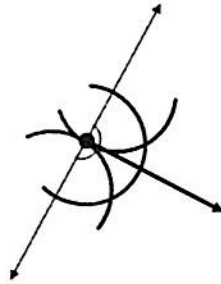
2.



3.

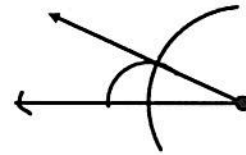


4.



Copy the angle below.

5.



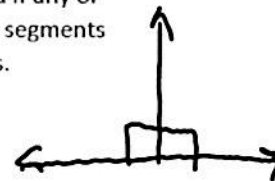
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Relevant Vocabulary

**Right Angle:** An angle is called a *right angle* if its measure is  $90^\circ$ .



**Perpendicular:** Two lines are *perpendicular* if they intersect in one point and if any of the angles formed by the intersection of the lines is a  $90^\circ$  (right) angle. Two segments or rays are perpendicular if the lines containing them are perpendicular lines.

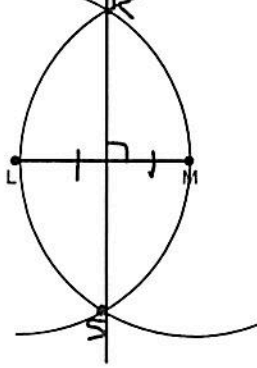


**Equidistant:** A point  $A$  is said to be *equidistant* from two different points  $B$  and  $C$  if  $AB = AC$ . A point  $A$  is said to be *equidistant* from a point  $B$  and a line  $l$  if the distance between  $A$  and  $l$  is equal to  $AB$ .



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Using a compass, how do you think we could construct the perpendicular bisector of  $\overline{LM}$ ?



- Steps:
- 1.) Semi -circle: Center L; radius  $\overline{LM}$
  - 2.) Semi -circle: Center M; radius  $\overline{ML}$
  - 3.) Label the points of intersections with the letters R and S.
  - 4.) Draw a line through R&S with appropriate markings.

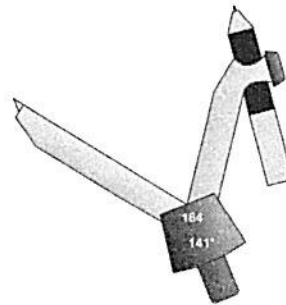
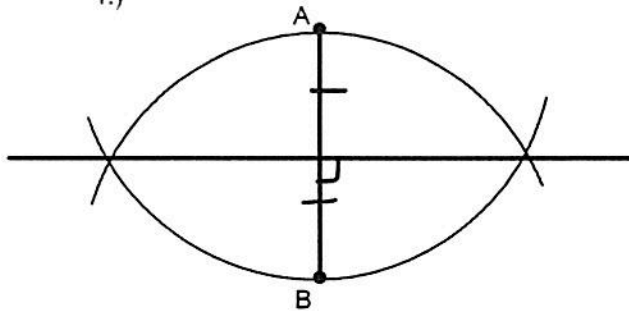
Examine segment RL and segment RM. Examine segment LS and MS. What do you notice?

$$\underline{\underline{RL=RM=LS=MS}}$$

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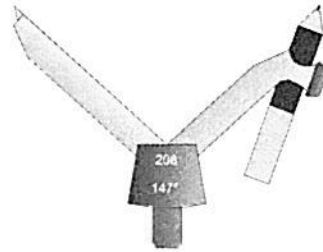
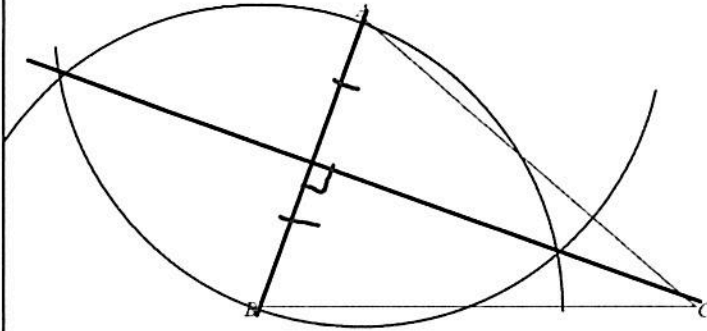
Practice: Construct the perpendicular bisector of segment AB in each diagram.

1.)



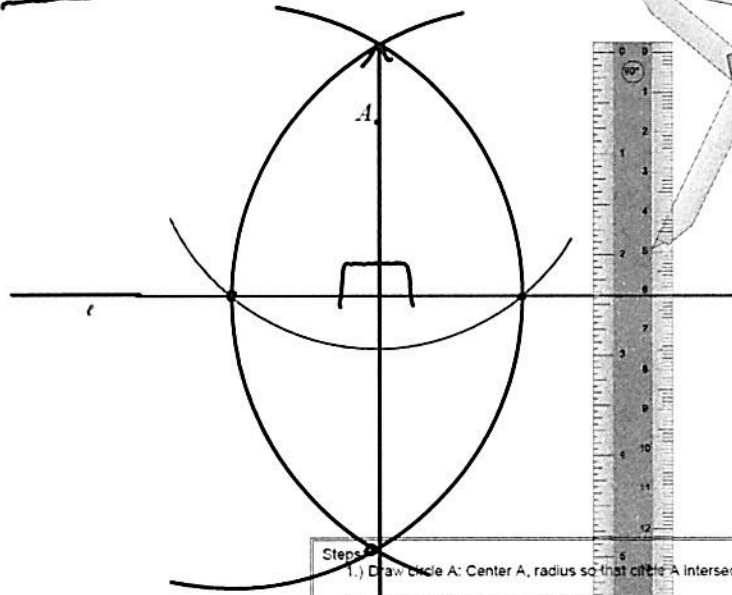
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2.)



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Drawing a Perpendicular to a line from a Point NOT on the Line

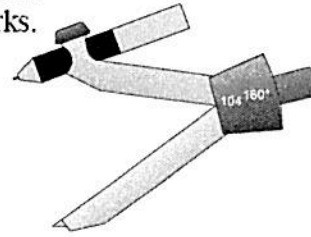
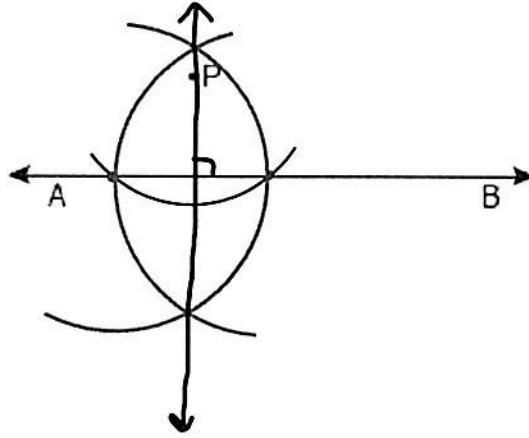


- Steps:
- 1.) Draw circle A: Center A, radius so that circle A intersects the line in two points
  - 2.) Label the two points of intersection as B and C.
  - 3.) Draw circle B: center B, radius BC
  - 4.) Draw circle C: center C, radius CB
  - 5.) Label the unlabeled intersection of circle B and circle C as D.
  - 6.) Draw AD.

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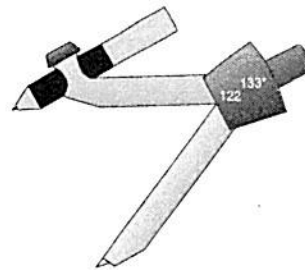
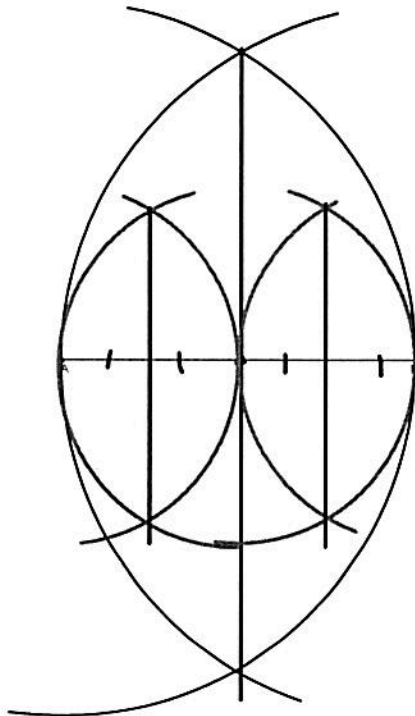
Practice:

Arrows! Using a compass and straightedge, construct the line that is perpendicular to  $AB$  and that passes through point  $P$ . Show all construction marks. Right Angle Box!



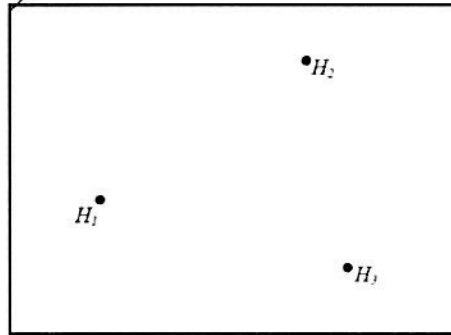
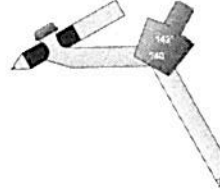
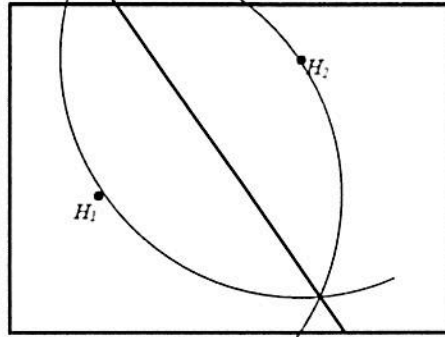
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1.) Divide the following segment  $AB$  into 4 segments of equal length.



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2.) Two homes are built on a plot of land. Both homeowners have dogs, and are interested in putting up as much fencing as possible between their homes on the land, but in a way that keeps the fence equidistant from each home. Use your construction tools to determine where the fence should go on the plot of land.



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