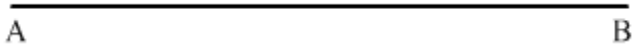


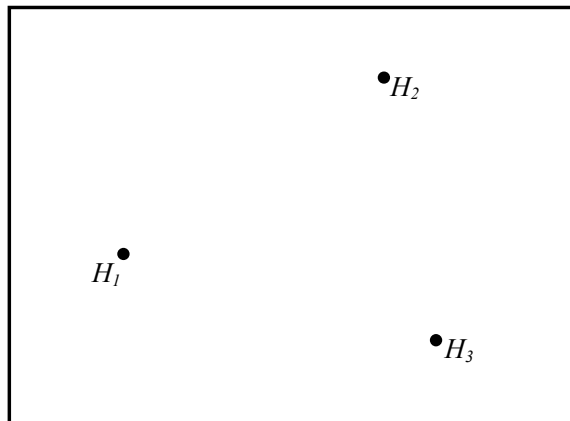
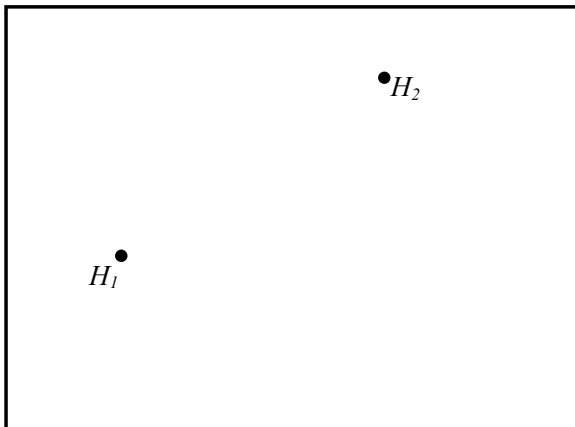
Geometry 1.3 Construction perpendicular lines

Opening exercise:

1. Using the diagram below, divide line segment \overline{AB} into 4 congruent segments.

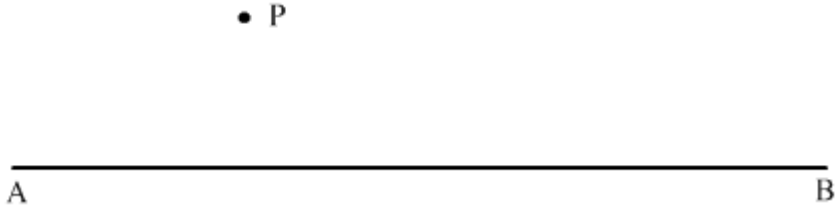


2. Two homes are built on a plot of land. Both homeowners have dogs and are interested in putting up fencing between their homes. They want the fencing to be installed in a way that keeps the fence equidistant from each home. Use your construction tools to determine where the fence should go on the plot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

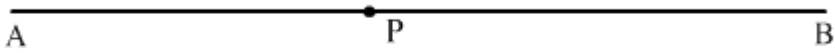


How will the fencing alter with the addition of a third home?

1. Construct a line perpendicular to \overline{AB} and passing through point P .
 1. With the pin of the compass on point P , draw an arc intersecting \overline{AB} at two points (extend \overline{AB} if necessary).
 2. From each point of intersection (from step 1), extend your compass and draw an arc.
 3. Draw a line from point P through the point at which the two arcs drawn in step 2 intersect.



2. Using the same steps as the ones used in question 1, construct a line perpendicular to \overline{AB} and passing through point P .



3. Using the diagram below, construct the altitude from angle A to \overline{BC} (a line passing through angle A and perpendicular to \overline{BC}).

