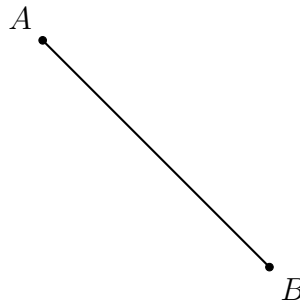


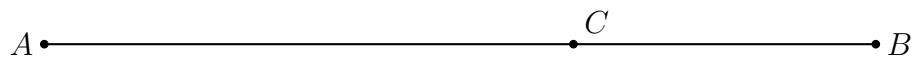
**Classwork: Constructions using perpendicular bisection**

Use only a compass and straightedge for these classical constructions.

1. Construct a perpendicular bisector the given line segment  $\overline{AB}$ . Label the midpoint of  $\overline{AB}$  as  $M$ . [Leave all construction marks.]



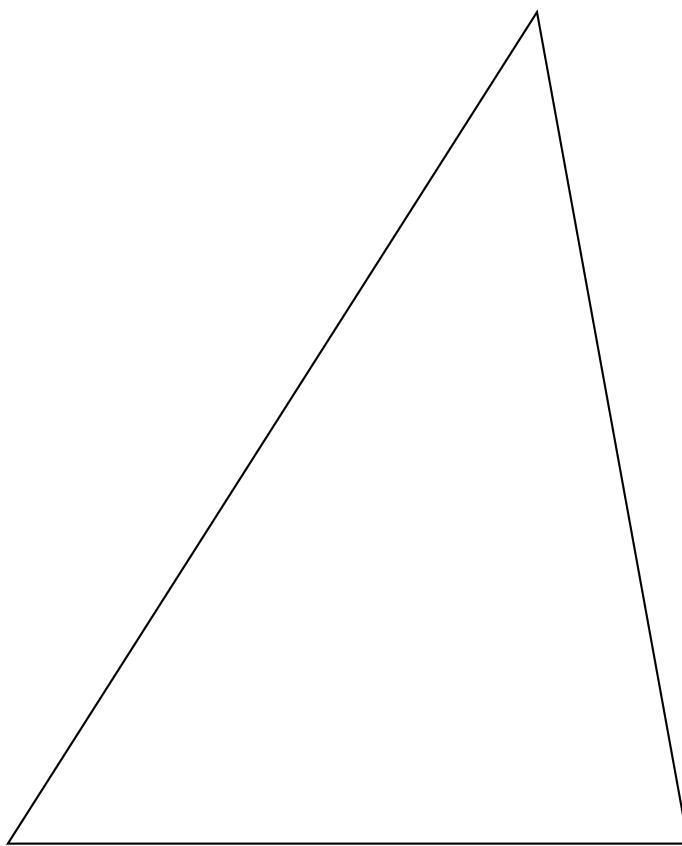
2. Construct a perpendicular to  $\overline{AB}$  through  $C$ .  
Hint: Start with a circle centered on  $C$ .



**Construct a triangle's circumcenter**

3. Construct a perpendicular bisector of each of the legs of the triangle. Show their intersection, the circumcenter.

Hint: Circles should be centered at the triangle vertices, but should only be sufficiently large to intersect the other circles.



**Construct a triangle's centroid**

4. Bisect each leg of the triangle using only a compass and straightedge. Mark each midpoint, and draw a line (a *median*) connecting it to the opposite vertex. Show the medians' intersection, the centroid.

Hint: Circles should be centered at the triangle vertices, but should only be sufficiently large to intersect the other circles.

