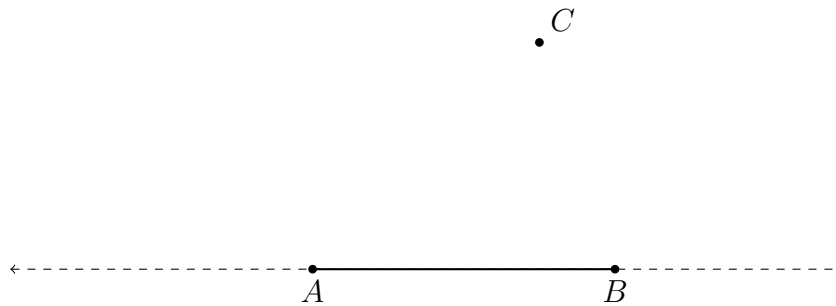


**Do Now: Applications of altitude constructions**

Use only a compass and straightedge for these classical constructions.

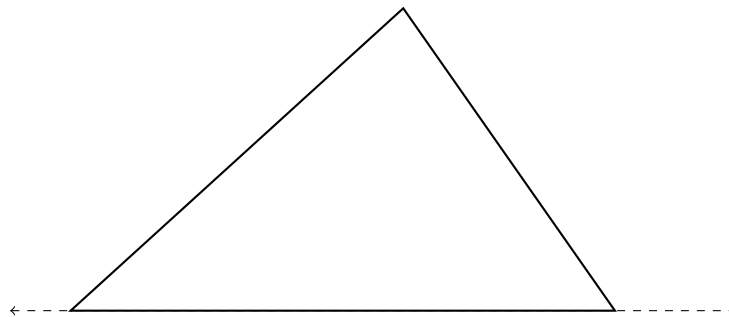
1. Construct a perpendicular to  $\overline{AB}$  through  $C$ .

Hint: Start with a circle centered on  $C$  that intersects  $\overleftrightarrow{AB}$  in two places.



**Construct a triangle's orthocenter**

2. Construct a perpendicular to each of the legs of the triangle from the opposite vertex. Show their intersection, the orthocenter. Hint: you may extend the triangle sides as has been done for you on one side.



**Spicy: Construct a hexagon inscribed in a circle**

3. Construct an equilateral triangle on  $\overline{AB}$  by drawing a circle centered on  $A$ . Continue with a second equilateral triangle on  $\overline{AC}$  by drawing a circle centered on  $C$ . Work around the circle  $B$  four more times to construct the hexagon.

