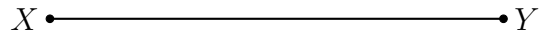


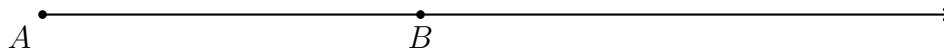
Name:

8.2 Extension: Formal constructions with compass and straight edge

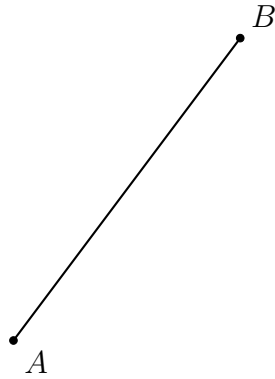
1. Complete the construction of an equilateral triangle with one side as \overline{XY} . Show all construction marks, but make no extra lines.



- (a) Identify two circles in the construction. For each, name the center of the circle and the radius.
 - (b) Assuming that the third vertex of the triangle is point Z , explain why the distance from X to Z is the same as the distance from X to Y .
2. Using a compass and straightedge, construct a line segment \overline{AC} on the ray \overrightarrow{AB} that is twice the length of \overline{AB} .



3. Complete the construction of a perpendicular bisector of \overline{AB} . Label the midpoint M . Show all construction marks, but make no extra lines.



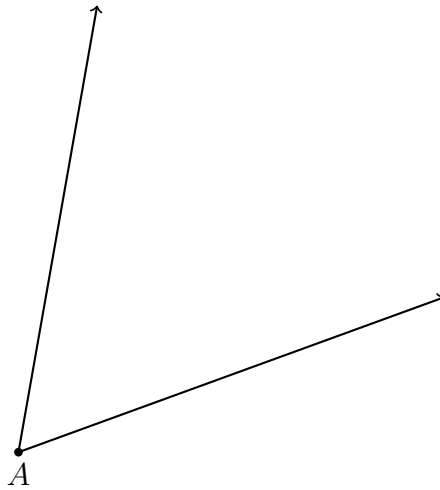
4. Complete the construction of a line perpendicular to line l through the point P . Show all construction marks, but make no extra lines.

P •

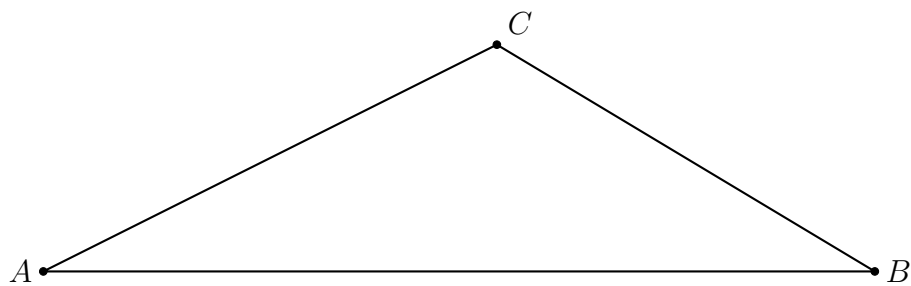


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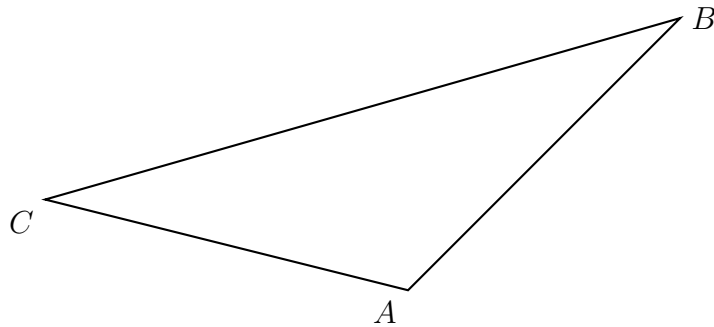
5. Bisect the given angle.



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



7. Using a compass and straightedge, construct M , the midpoint of \overline{AB} . Then draw the median \overline{CM} .



8. Using a compass and straightedge, dilate $\triangle ABC$ by a scale factor of 2 centered at A . Construct line segment $\overline{AB'}$ that is twice the length of \overline{AB} and $\overline{AC'}$ that is twice the length of \overline{AC} . Draw $\overline{B'C'}$ to complete the desired triangle, $\triangle AB'C'$.

