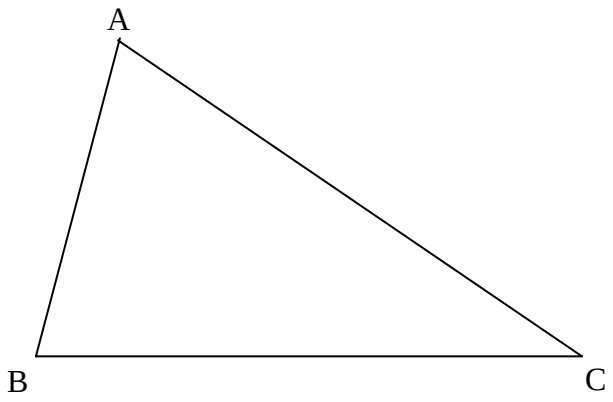
# Constructions




1. Construct all the points equidistant from points A and C. Use mathematics to justify your construction.

2. Construct all the points equidistant from ray BA and ray BC. Use mathematics to justify your construction.

3. Construct a mid-segment of triangle ABC that is parallel to $\overline{AC}$. Explain the steps you used in your construction. Use words, symbols, or both in your explanation.

4. Construct a right triangle that has legs of lengths AB and AC. Explain the steps you used in your construction. Use words, symbols, or both in your explanation.

5. Construct a right triangle that has a leg of length AB and a hypotenuse of length AC. Explain the steps you used in your construction. Use words, symbols, or both in your explanation.

Possible Answers/Samples:

1. I constructed the perpendicular bisector because the perpendicular bisector of $\overline{AC}$ is the set of points that are equidistant from A and C.
2. I constructed the angle bisector because the angle bisector is the set of points equidistant from the two rays of an angle.
3. I constructed the perpendicular bisectors of sides $\overline{AB}$ and $\overline{BC}$ to find their midpoints. I connected the midpoints to determine the midsegment.
4. First, construct a copy of $\overline{AB}$. Then, at A, construct a perpendicular line. Then copy the length of $\overline{AC}$ onto the perpendicular. Next, connect the points B and C together.
5. First, construct a copy of $\overline{AB}$. Then, at A, construct a perpendicular line. Then, at B, copy the length of $\overline{AC}$ until it intersects the perpendicular. This intersection is the point C.