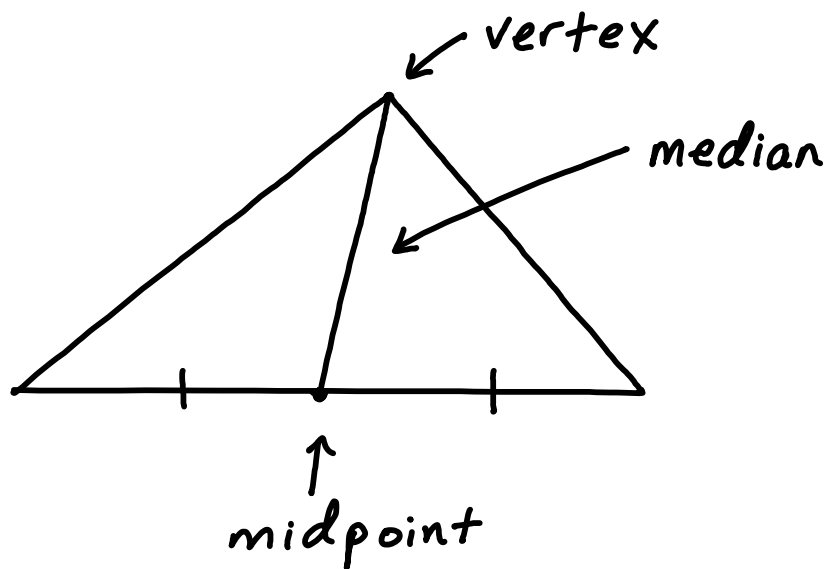


Chapter Review



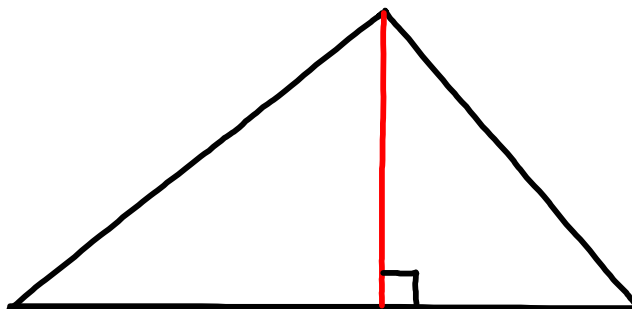
Medians, Altitudes and Bisectors

A **median** of a triangle is a segment from a vertex to the midpoint of the opposite side.

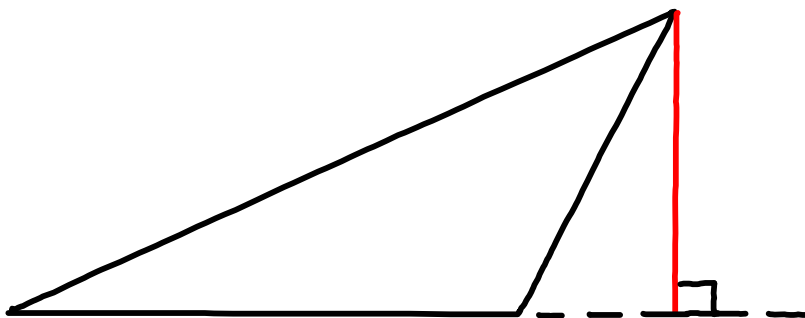


An **altitude** of a triangle is the perpendicular segment from a vertex to the line that contains the opposite side.

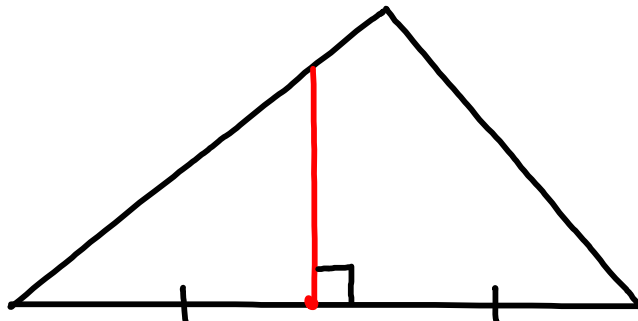
altitude of acute triangles



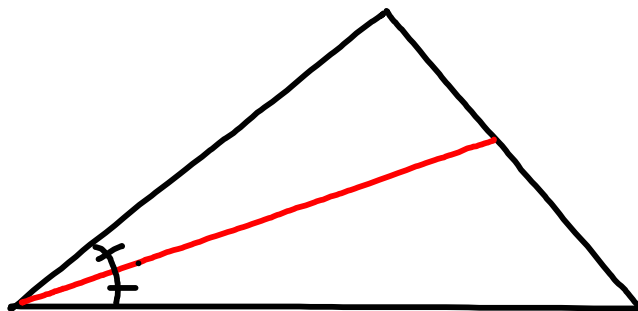
altitude of obtuse triangles



A **perpendicular bisector** of a segment is a line(or ray) that is perpendicular to the segment at it's midpoint.



The **bisector of an angle** is the ray that divides the angle into two congruent adjacent angles

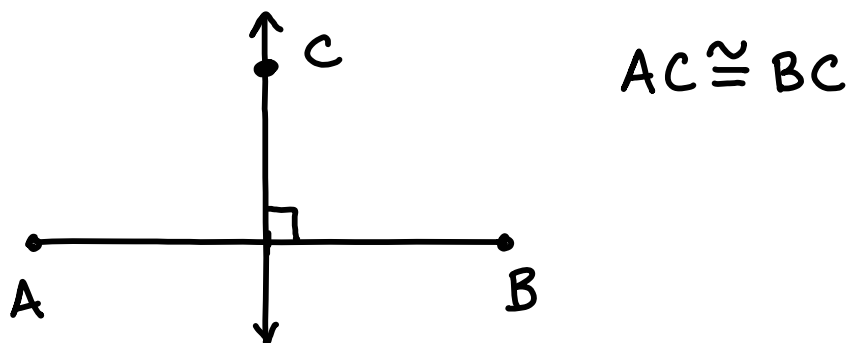




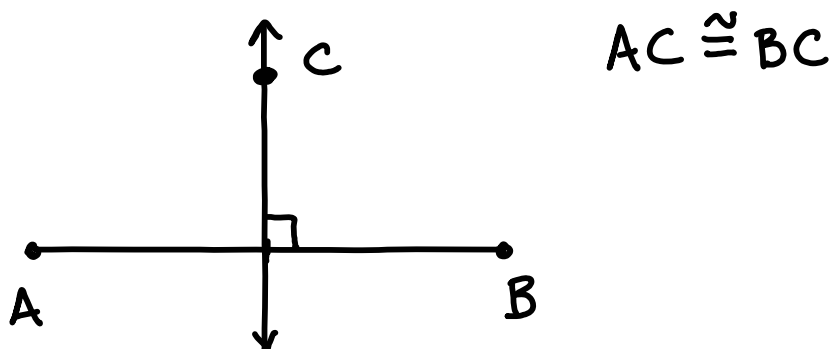
Bisector Theorems

Perpendicular bisector theorems

if a point lies on the perpendicular bisector of a segment, then the point is equidistant from the endpoints of the segment.

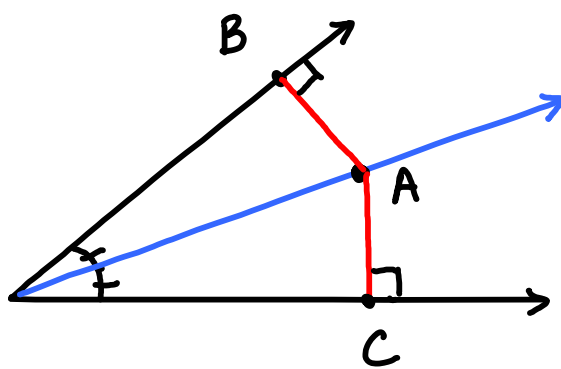


if a point is equidistant from the endpoints of a segment, then the point lies on the perpendicular bisector of the segment.



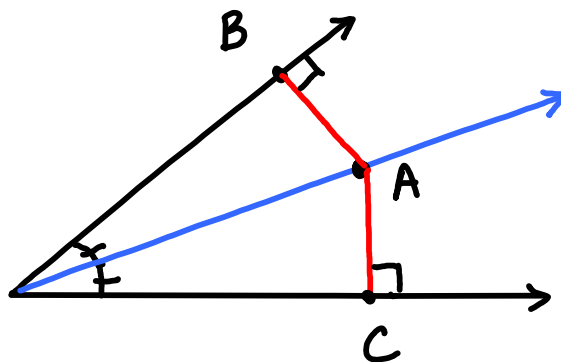
Angle bisector theorems

if a point lies on the bisector of an angle, then the point is equidistant from the sides of an angle.



$$AB \cong AC$$

if a point is equidistant from the sides of an angle, then the point lies on the bisector of the angle



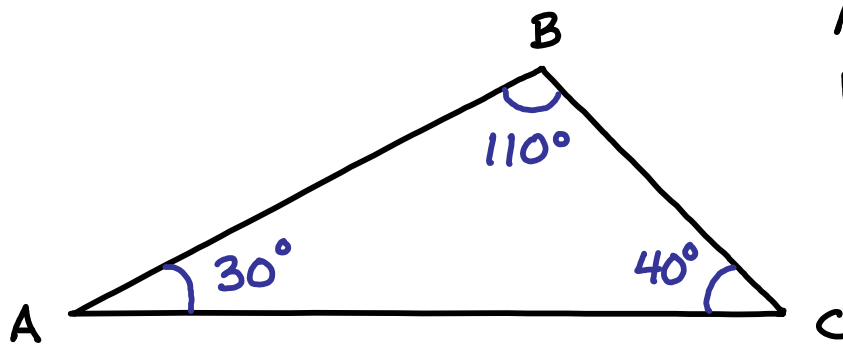
$$AB \cong AC$$



Triangle Inequalities

Angle inequalities in triangles

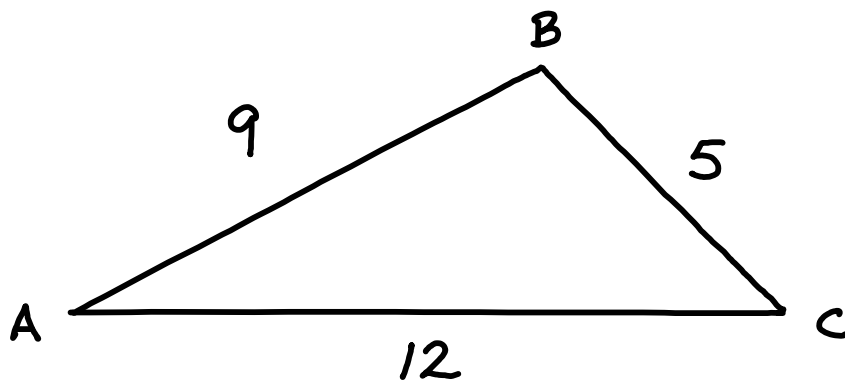
if one side of a triangle is longer than a second side, then the angle opposite the first side is larger than the angle opposite the second side.



$$AC > AB > BC$$
$$110^\circ > 40^\circ > 30^\circ$$

The Triangle Inequality Theorem

the sum of the lengths of any two sides of a triangle is greater than the length of the third side.



$$9 + 5 > 12$$

$$9 + 12 > 5$$

$$12 + 5 > 9$$