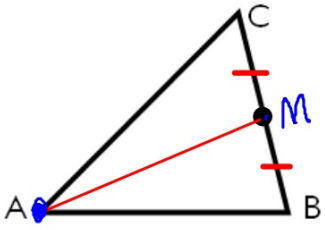
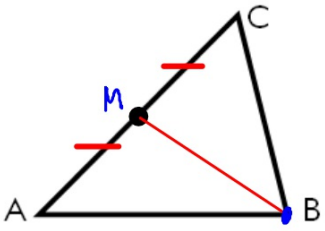
SECTION 4.7: MEDIANS, ALTITUDES, AND PERPENDICUALAR BISECTORS

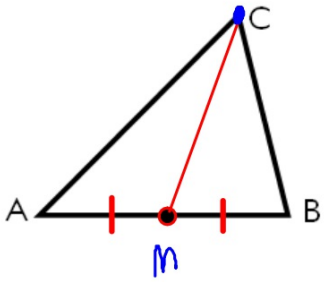
Standards:

1.0 - Students demonstrate understanding by identifying and giving examples of undefined terms, axioms, theorems, and

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

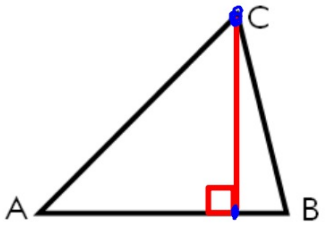
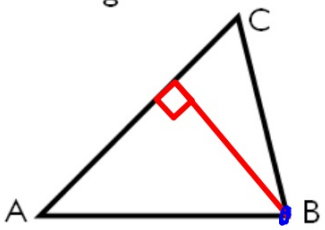
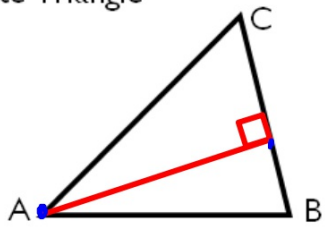


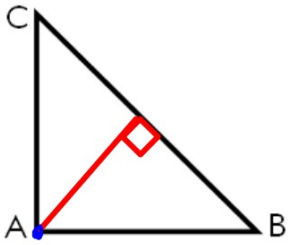
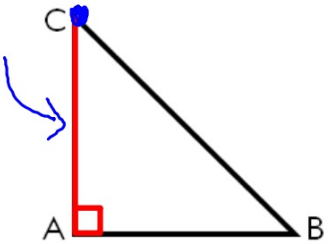
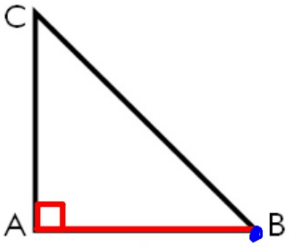


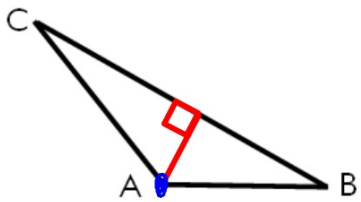
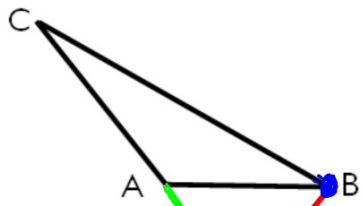
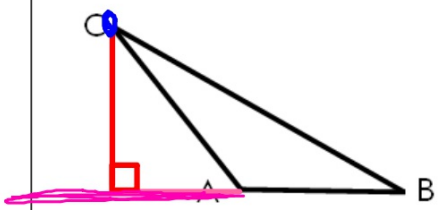


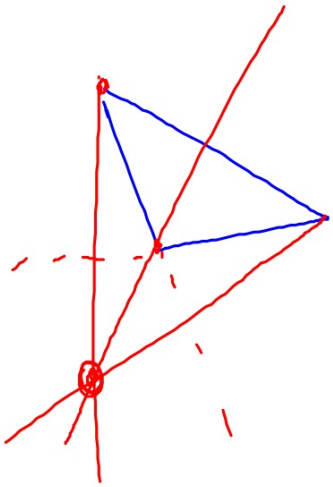
ALTITUDE

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

Acute Triangle	Acute Triangle	Acute Triangle
		

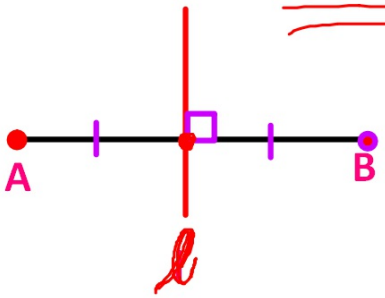
Right Triangle	Right Triangle	Right Triangle
		

Obtuse Triangle	Obtuse Triangle	Obtuse Triangle
		



PERPENDICULAR BISECTOR

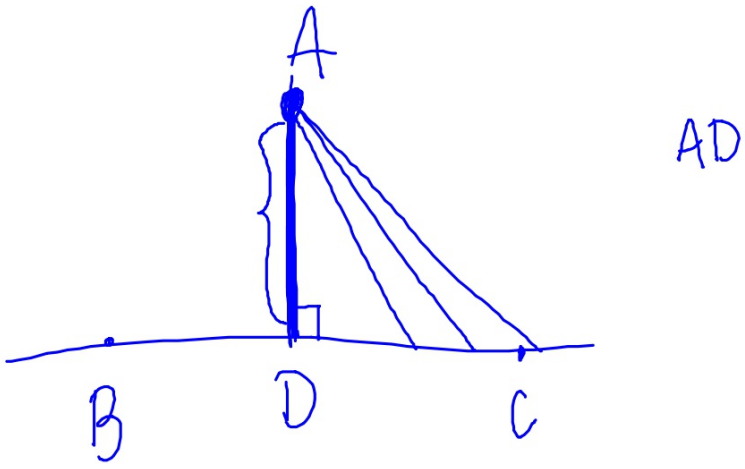
A perpendicular bisector of a segment is a line (or ray or segment) that is perpendicular to the segment at its midpoint.



l is the perpendicular bisector of $\overline{AB}$

DISTANCE FROM A POINT TO A LINE

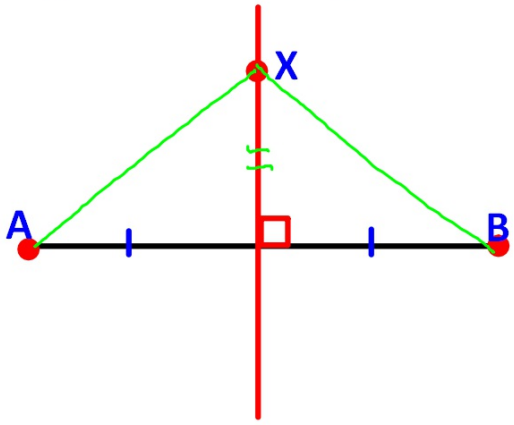
The distance from a point to a line (or plane) is defined to be the length of the perpendicular segment from the point to the line (or plane).



THEOREM

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

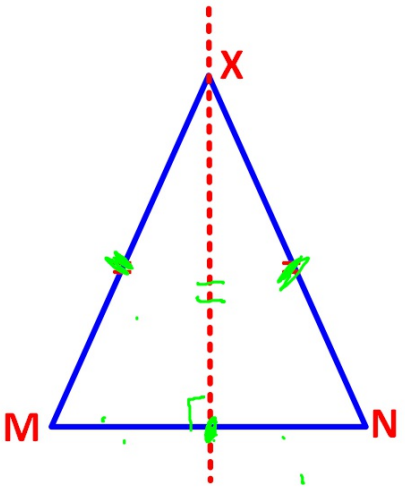
$AX = XB$



THEOREM

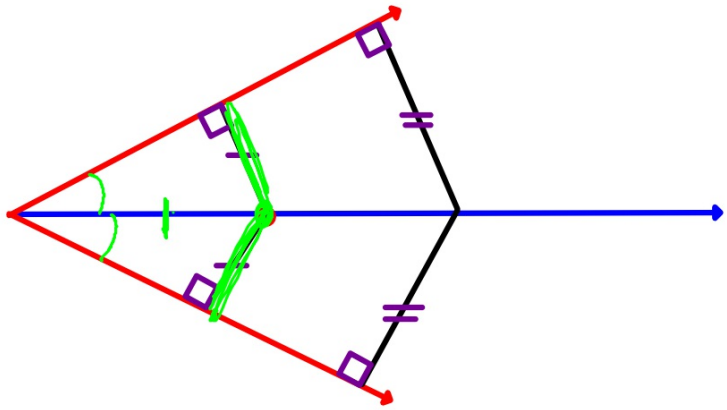
If a point is equidistant from the endpoints of a segment, then the point lies on the perpendicular bisector of the segment.

If MX = NX then X is on the perp bisector of $\overline{MN}$



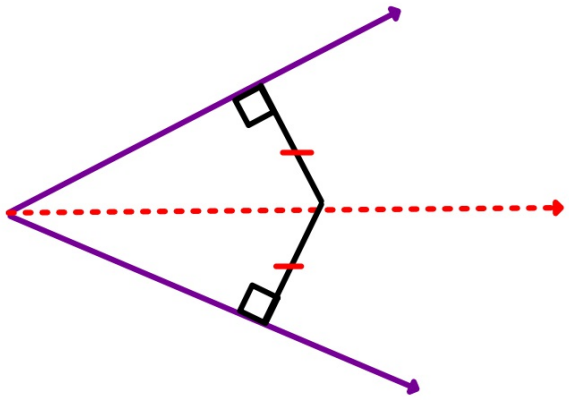
THEOREM

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



THEOREM

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



HOMEWORK

- 4-7 Worksheet &
- p. 156 # 2-5 all, 7-13 all