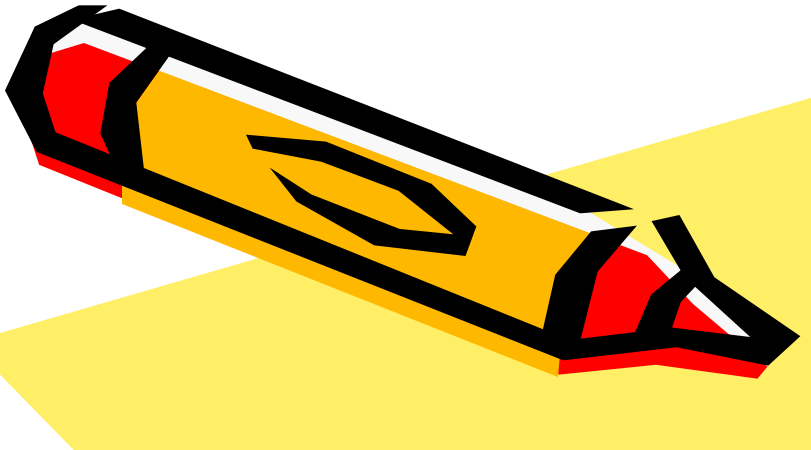
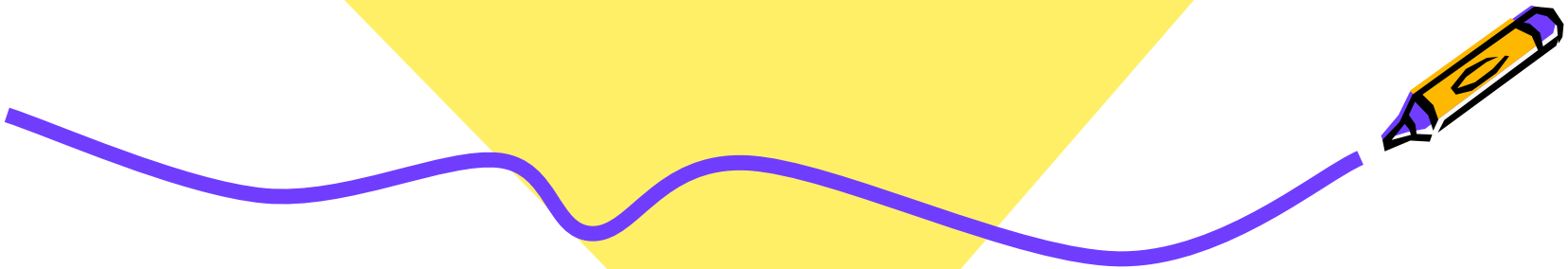


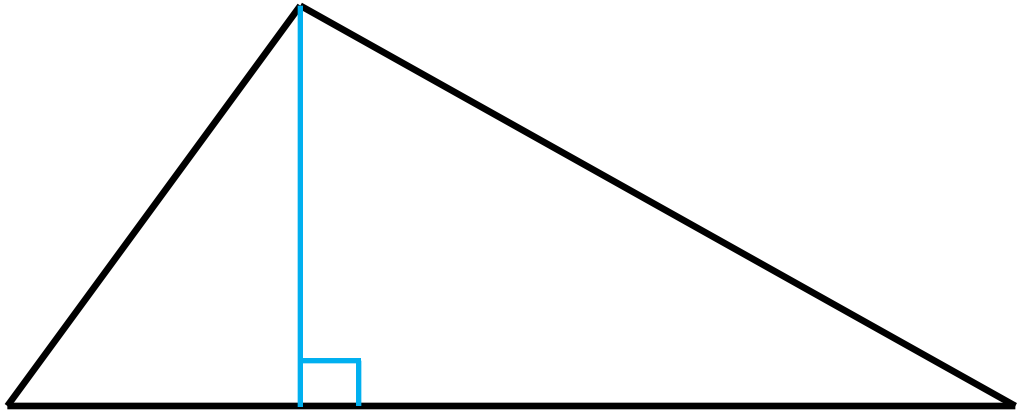
Geometry

Altitudes



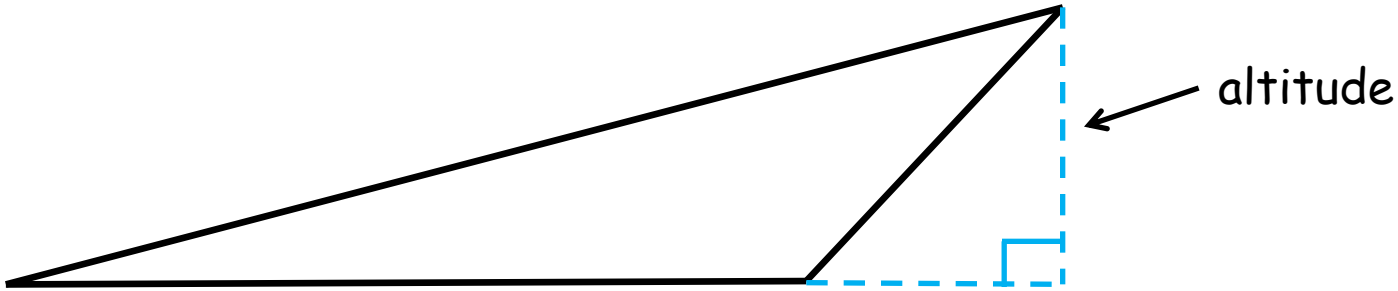
Altitude

A segment that goes from the vertex of a triangle, perpendicular to the line containing the opposite side.

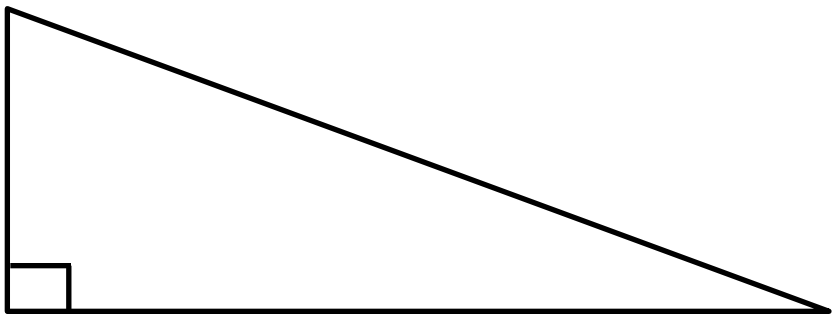


Altitude

An altitude can appear outside the triangle (in the case of an obtuse triangle)

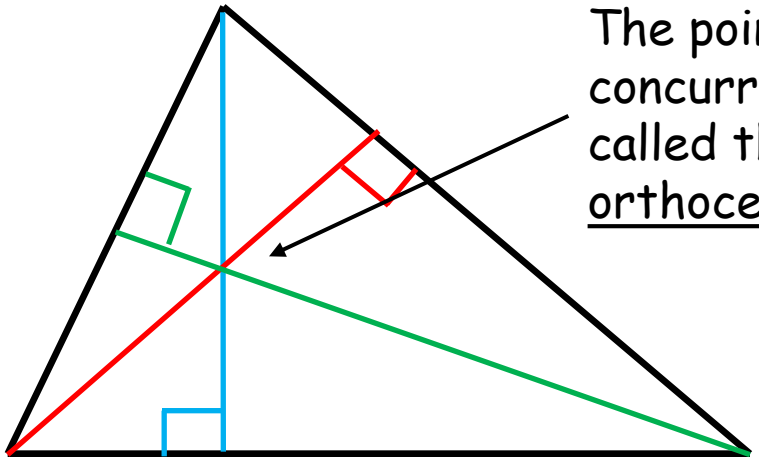


In a right triangle, both legs are altitudes

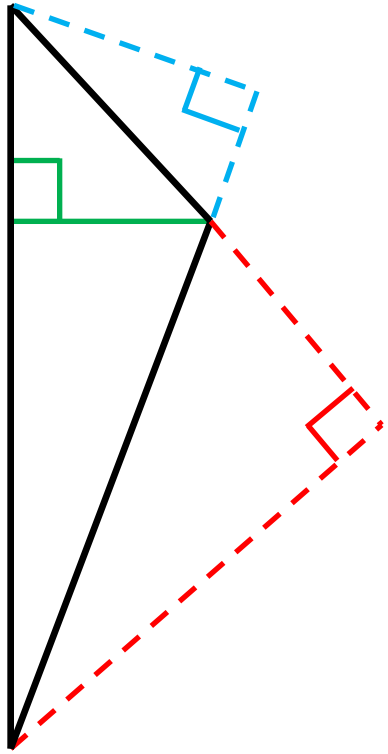


Altitude

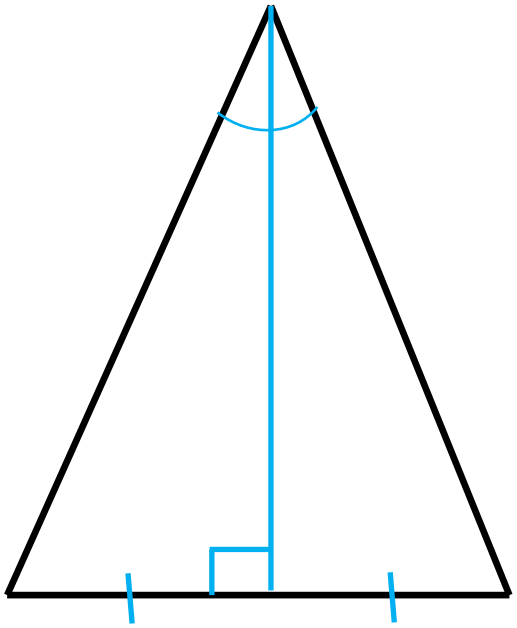
A triangle could have up to 3 altitudes.



The point of concurrency is called the orthocenter .



Altitude

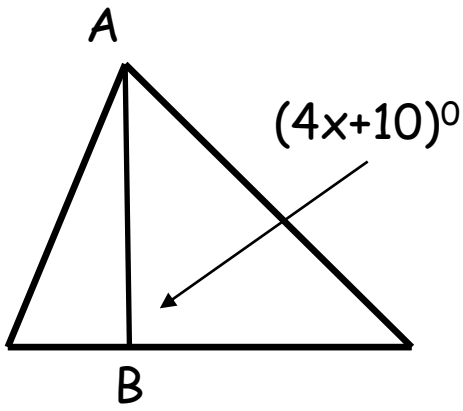


In an isosceles triangle, the perpendicular bisector, angle bisector, median, and altitude from the vertex angle to the base are all the same segment.

In an equilateral triangle, this is true for the segment drawn from any vertex.

Practice

$\overline{AB}$ is an altitude. Find x.



Triangle ABC has points,
A(-2, 6)
B(3, 0)
C(-3, -4)

$\overline{AD}$ is a median.
Find the ordered pair for D.
Determine if $\overline{AD}$ is also an altitude.