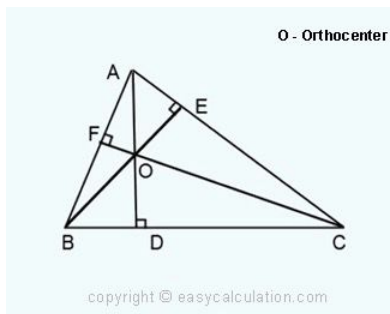


# Altitude and Orthocenter

**Orthocenter** - The orthocenter is one of the triangle's points of concurrency formed by the intersection of the triangle's 3 altitudes. These 3 altitudes are always concurrent. If the triangle is an obtuse, the orthocenter will be on the exterior of the shape.

**Altitude** - A line that extends from one vertex of a triangle to the opposite side.



## How to Find the Orthocenter

First you would have to use the slope formula.

$y_2 - y_1$   $x_2 - x_1$ . Next you would need to determine the slope of altitude by using

$m_{\perp} = -1m$ . Finally you would use point-slope form.

$y - y_1 = m_{\perp}(x - x_1)$

# Proving a Triangle's Concurrency

When dealing with altitude and orthocenter, you may be asked to prove its concurrency. This video shows you how to do that step by step. <http://youtu.be/DF-rlJ8BUuA>

Francisco Alcantar

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