BISECTOR
MEDIAN
HEIGHT OF
THE
TRIANGLE

Height

An height is a perpendicular dropped from one vertex to the side (or its extension) opposite to the vertex. It measures the distance between the vertex and the line which is the opposite side. Since every triangle has three vertices it has three height

Height of an acute triangle :

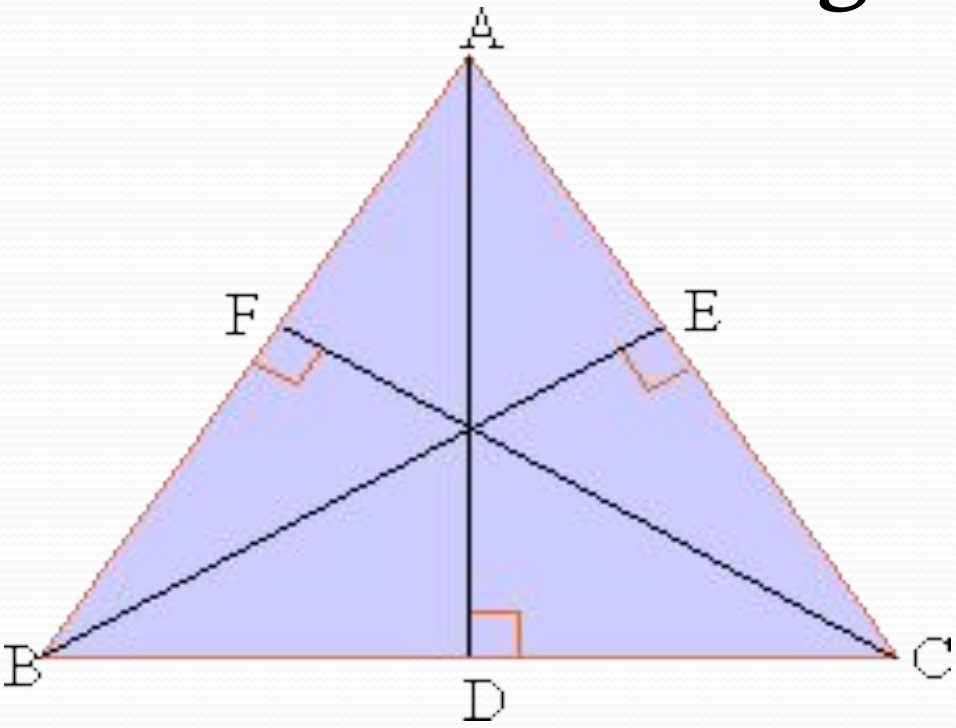

Figure 2.10

For an acute triangle figure 2.10 all the height are present in the triangle.

Height for a right triangle :

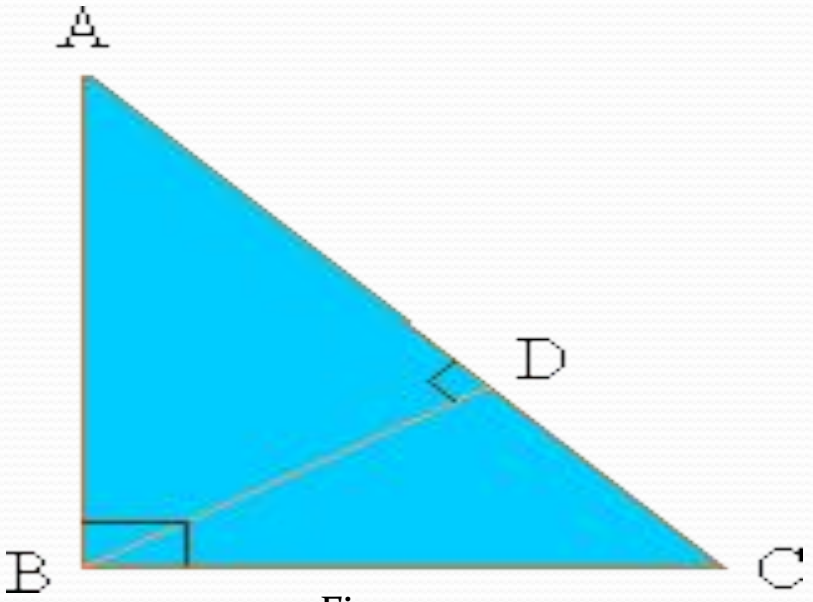

Figure 2.11

For a right triangle two of the height lie on the sides of the triangle, seg. AB is an height from A on to seg. BC and seg. CB is an height from C on to seg.AB. Both of them are on the sides of the triangle. The third height is seg. BD i.e.from B on to AC. The intersection point of seg. AB, seg. BC and seg. BD is B. Thus for a right triangle the three height intersect at the vertex of the right angle.

Height for an obtuse triangle :

D ABC is an obtuse triangle. height from A meets line containing seg.BC at D. Therefore seg. AD is the height. Similarly seg.CE is height on to AB and BF is the height on to seg. AC. Of the three height, only one is present inside the triangle. The other two are on the extensions of line containing the opposite side. These three height meet at point P which is outside the triangle.

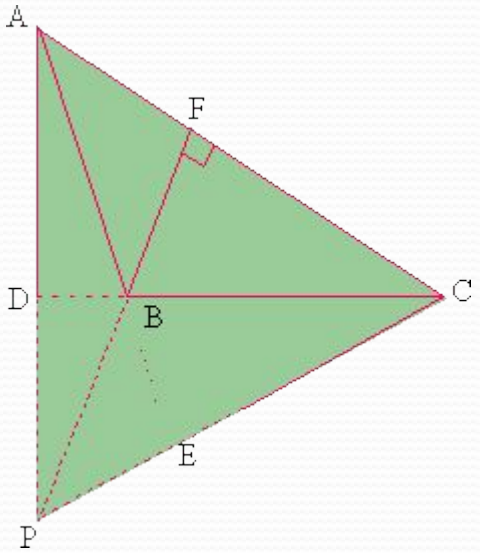

Figure 2.12

Median

A line segment from the vertex of a triangle to the midpoint of the side opposite to it is called a median. Thus every triangle has three medians. Figure 2.13 shows medians for acute right and obtuse triangles.

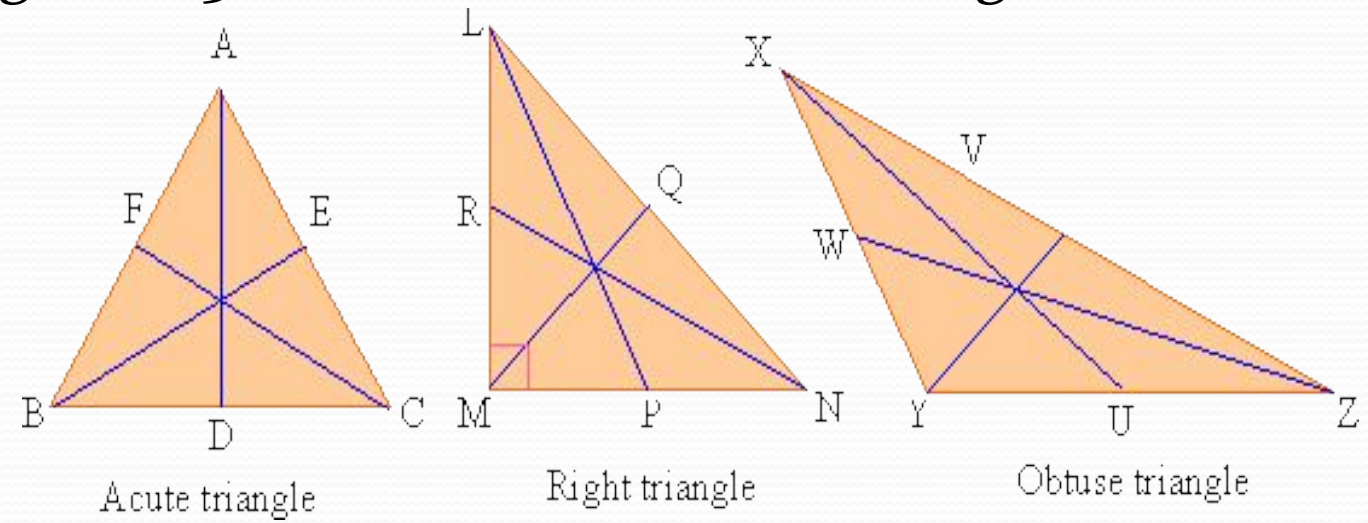

Figure 2.13

All three medians always meet inside the triangle irrespective of the type of triangle.

Angle Bisector

A line segment from the vertex to the opposite side such that it bisects the angle at the vertex is called as angle bisector. Thus every triangle has three angle bisectors. Figure 2.14 shows angle bisectors for acute right and obtuse triangles.

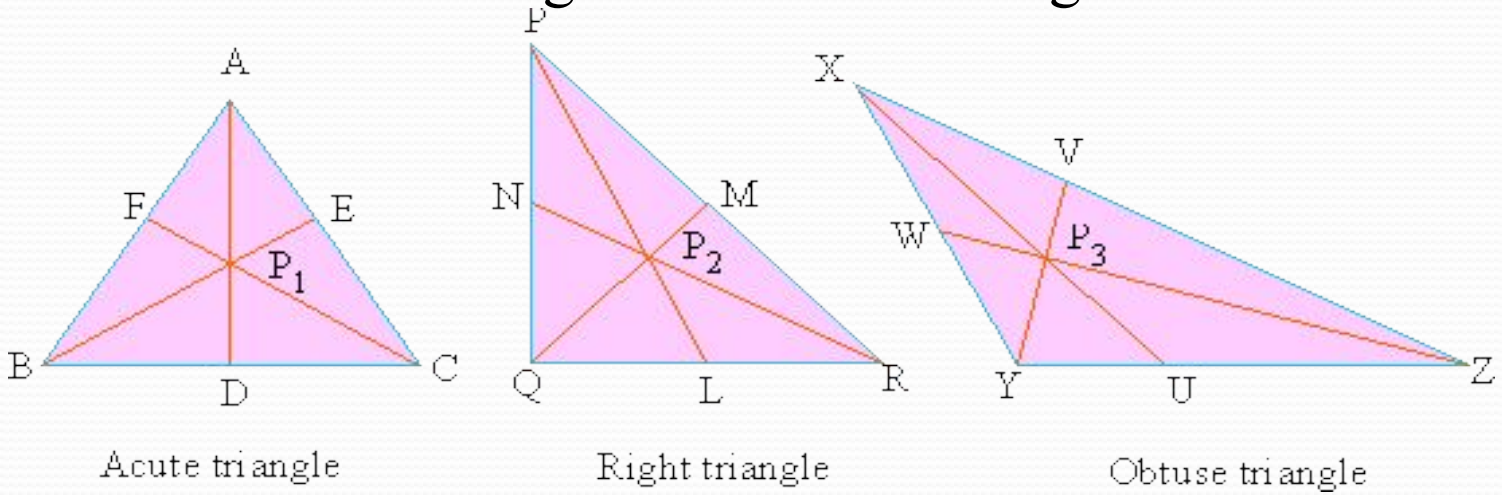

Figure 2.14