## Median and Altitude of a triangle

## Median of a Triangle:

The line segment joining the mid-points of the sides of a triangle to the opposite vertices are called medians of the triangle.

Let D, E and F are the mid- points of sides BC, AC and AB respectively of  $\triangle$ ABC. Then, the line segments AD, BE and CF are the medians of  $\triangle$ ABC.

## Altitudes of a Triangle :

In a triangle, the line segment drawn from the vertex to its opposite side so that it becomes perpendicular to its opposite side is called the altitude of the triangle. A triangle has three altitudes with respect to each side.

In the figure, AD, BE and CF are the three altitudes of  $\triangle$ ABC drawn respectively from A on BC, from A to BC, from B on AC and from C on AB.



D

**Angle Bisector:** An angle bisector is a line or ray that divides an angle into two equal angles. Example: Let's say you have an angle ABC which is 60 degrees. An angle bisector would be a line or ray BD (with D on line segment AC), such that it divides the 60 degree angle ABC into two equal angles, ABD and DBC, each being 30 degrees.

**Perpendicular Bisector:** A perpendicular bisector is a line which cuts a line segment into two equal parts at 90 degrees. Example: If you have a line segment AB, a perpendicular bisector would be a line or segment CD (with C and D not on line segment AB) such that it intersects AB at its midpoint, creating two equal line segments, AC and BC, and the angle between AB and CD is 90 degrees (i.e., the line CD is perpendicular to AB).