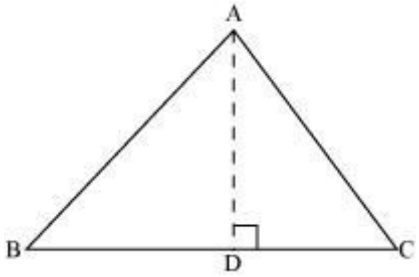
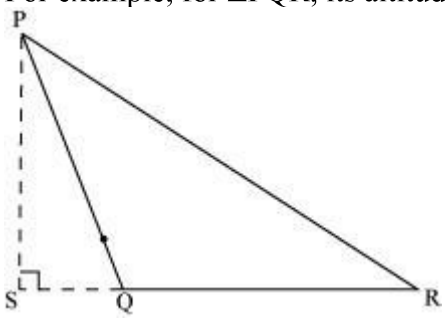
4. Altitudes and Medians of a triangle

- Altitude of a triangle

  An altitude is the perpendicular drawn from the vertex of a triangle to its opposite side.



  In the given figure, AD is the altitude of ΔABC with respect to side BC.
  A triangle has three altitudes, one from each vertex.
  The altitude of a triangle may or may not lie inside the triangle.
  For example, for ΔPQR, its altitude lies outside it.

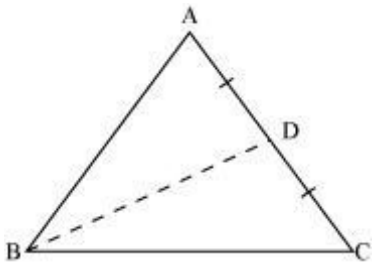


- A triangle is a simple closed curve made up of three line segments.

  It has three vertices, three sides and three angles.

- Triangles can be classified on the basis of their sides as:
  1. Scalene – No side of the triangle is equal
  2. Isosceles – Exactly two sides of the triangle are equal
  3. Equilateral – All the sides of the triangle are equal
- On the basis of angles, triangles can be classified as:
  1. Acute-angled – All the angles of the triangle are less than 90°
  2. Obtuse-angled – Any one of the angles of the triangle is greater than 90°
  3. Right-angled – Any one of the angles of the triangle is 90°
- Median of a triangle

  A median is a line segment joining the vertex of a triangle to the mid-point of the opposite side.



In the given ΔABC, if AD = DC, then BD is the median of ΔABC with respect to the side AC.

A triangle has three medians, one for each side.