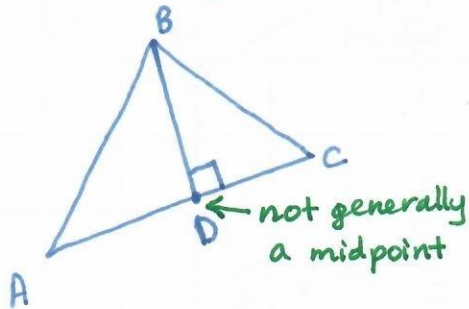
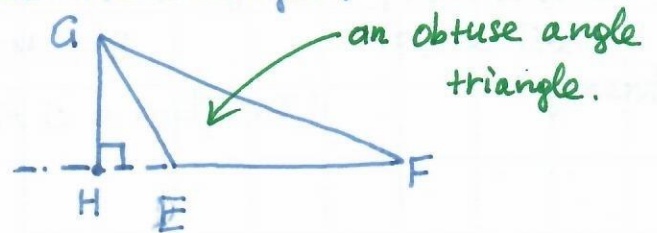


Line Segments in a Triangle

① Altitude (Height)



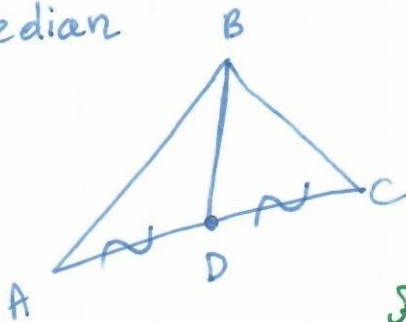
Is an altitude always inside the triangle?



∴ An altitude is a line segment drawn from a vertex perpendicular to the opposite side (all the way to that side) or its extension.

Remark: An altitude is not always inside the triangle.

② Median



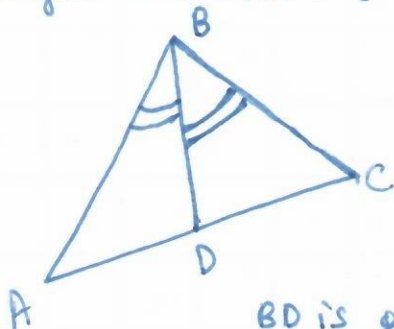
$AD = DC$ (D being a midpoint)

A median is a line segment drawn from a vertex to the midpoint of the opposite side.

A median is always inside the triangle.

Remark: (Show that) A median splits a triangle into two triangles of equal area.

③ Angle Bisector. (To bisect means to split in half).



$BD \Rightarrow$ an angle bisector:

line segment drawn from a vertex to the opposite side splitting the vertex angle in half.

BD is generally not a median and not an altitude.

Remark: $\frac{AB}{BC} = \frac{AD}{DC} \Rightarrow \frac{AD}{AB} = \frac{DC}{BC}$ Why?

Perpendicular Bisector (of a Line Segment)

A perpendicular bisector is a line through the midpoint of a line segment perpendicular to the line segment.

$$AM = MB$$

(M is a midpoint)

