Launch: (copy the vocab in your notes)

concurrent - when three or more lines intersect in one point

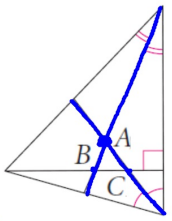
point of concurrency - point at which the lines intersect

6.4 Concurrence of Medians

Objective: To prove theorems using similarity.

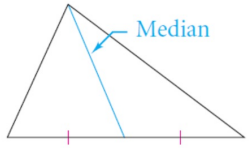
Example 1

Name the point of concurrency of the angle bisectors.

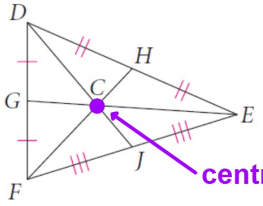


A

median of a triangle - segment whose endpoints are a vertex and the midpoint of the opposite side



Conjecture 6.1

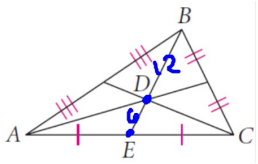


$DC = \frac{2}{3}DJ$ $EC = \frac{2}{3}EG$ $FC = \frac{2}{3}FH$

Example 2

D is the centroid of $\triangle ABC$ and $DE = 6$.

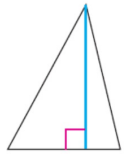
Find BE and DB.



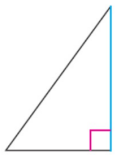
DB = 12

BE = 18

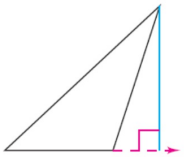
altitude of a triangle - perpendicular segment from a vertex to the line containing the opposite side.



Acute Triangle:
Altitude is inside.



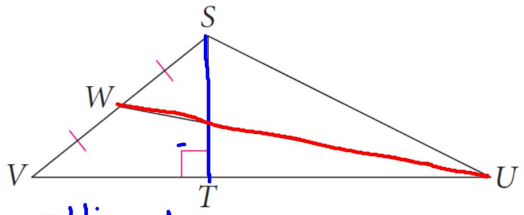
Right Triangle:
Altitude is a side.



Obtuse Triangle:
Altitude is outside.

Example 3

Is $\overline{ST}$ a median, an altitude, or neither?



altitude

Is $\overline{UW}$ a median, an altitude, or neither?

Median

On Your Own

6.4 Worksheet (1-12)