Name: __Key__

Median Notes

A cardboard triangle will balance on the end of a pencil if the pencil is placed on a particular point on the triangle. This point is call the MEDIAN OF A TRIANGLE. _The median of a triangle is the segment from a vertex to the midpoint of the opposite side. The point where all three medians intersect is called the CENTROID_. This will be the balancing point of the triangle.
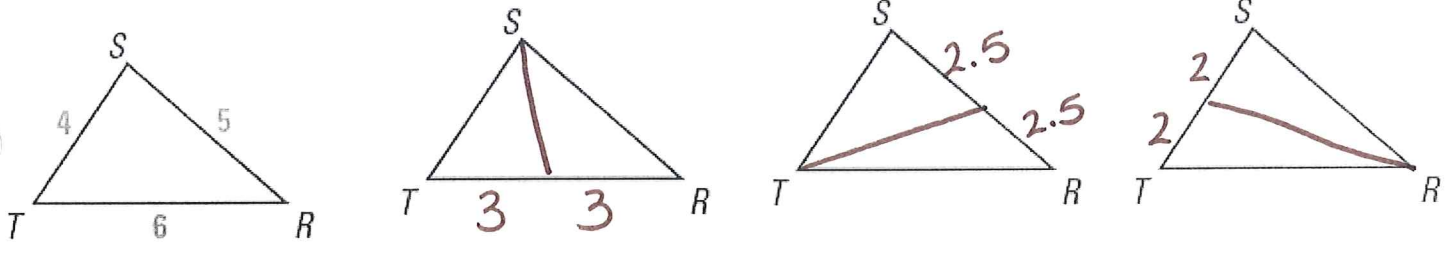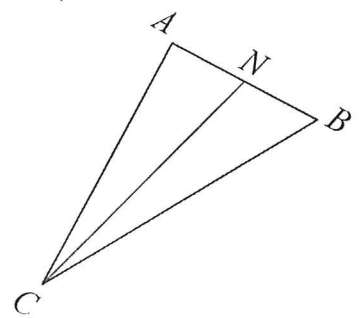
Examples of Medians:
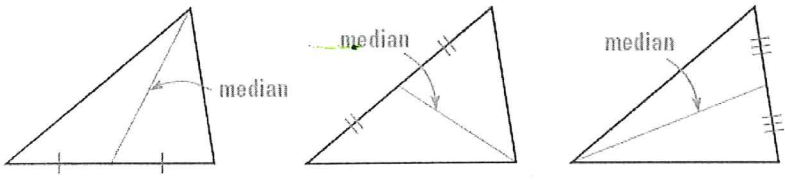
Example of Centroid:
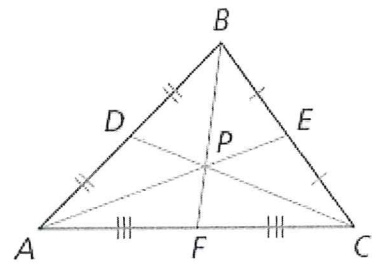
Ex. 1) In the following triangle, draw a median.

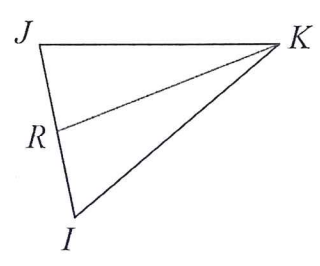Ex. 2) NC is the median of $\triangle ABC$. Find x if $NA = 4x - 1$ and $NB = 3x + 2$.

$NA \cong NB$

$4x - 1 = 3x + 2$

$\boxed{x = 3}$

Ex. 3) RK is the median of $\triangle IJK$. Find x if $JI = x - 2$ and $RI = x - 7$
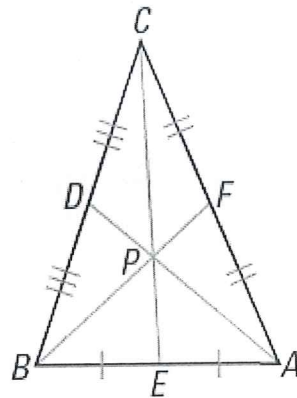

$JI = 2(RI)$

$x - 2 = 2(x - 7)$

$x - 2 = 2x - 14$

$\boxed{12 == x}$
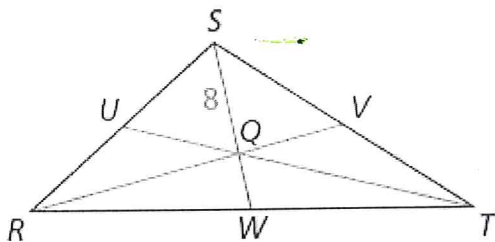
Intersection of Medians of a Triangle

Words The medians of a triangle intersect at the centroid, a point that is two thirds of the distance from each vertex to the midpoint of the opposite side.

Symbols If P is the centroid of $\triangle ABC$, then

$$AP = \tfrac{2}{3}AD, \; BP = \tfrac{2}{3}BF, \text{ and } CP = \tfrac{2}{3}CE.$$

Ex. 4) Q is the centroid of $\triangle RST$. If $SQ = 8$, find QW and WS.

$SQ = \tfrac{2}{3}(SW)$
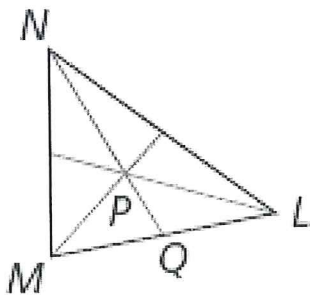
$8 = \tfrac{2}{3}WS$

$\boxed{12 = WS}$

$SW = SQ + QW$

$12 = 8 + QW$

$\boxed{4 = QW}$

Ex. 5) If P is the centroid of $\triangle MNL$ and $QN = 21$in, find NP and PQ.
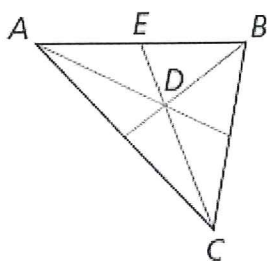

$NP = \tfrac{2}{3}NQ$

$NP = \tfrac{2}{3}(21)$

$\boxed{NP = 14 \text{ in.}}$

$QN = NP + PQ$

$21 = 14 + PQ$

$\boxed{7 = PQ}$

Ex. 6) If D is the centroid of $\triangle ABC$ and $ED = 18$ ft , find DC and EC.
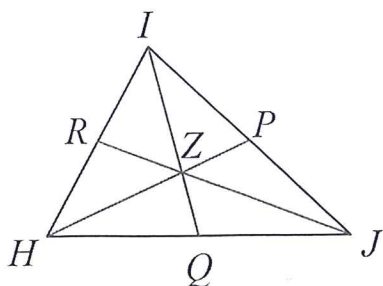

$CD = \tfrac{2}{3}EC$

$ED = \tfrac{1}{3}(EC)$

$18 = \tfrac{1}{3}EC$

$\boxed{54 \text{ ft} = EC}$

$DC = \tfrac{2}{3}(54)$

$\boxed{DC = 36 \text{ ft}}$

Ex. 7) If Z is the centroid of $\triangle HIJ$ where $JR = 5x + 4$ and $ZR = 2x$, find JZ.

$ZR = \tfrac{1}{3}JR$

$2x = \tfrac{1}{3}(5x+4)$

$2x = \tfrac{5}{3}x + \tfrac{4}{3}$

$\tfrac{1}{3}x = \tfrac{4}{3}$

$x = 4$

$JR = 5(4)+4 = 24$

$ZR = 2(4) = 8$

$JR = JZ + ZR$

$24 = JZ + 8$

$\boxed{JZ = 16}$