

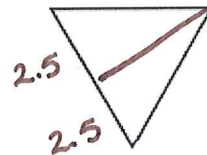
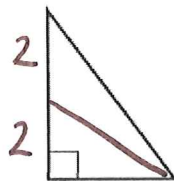
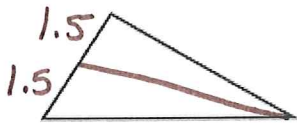
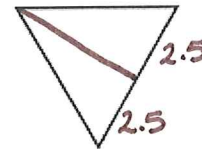
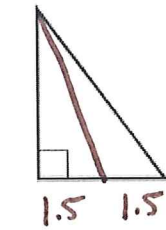
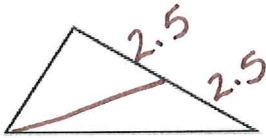
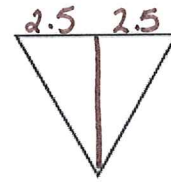
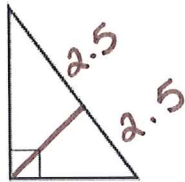
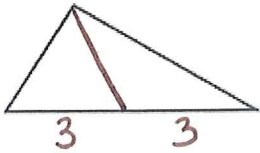
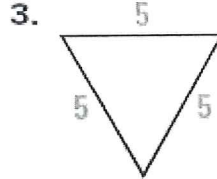
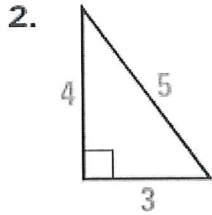
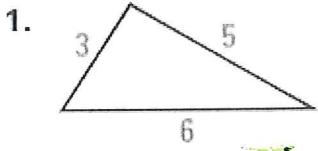
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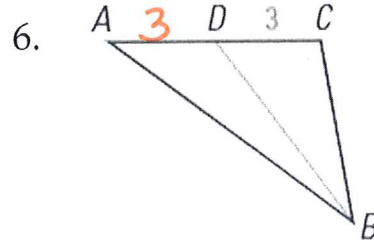
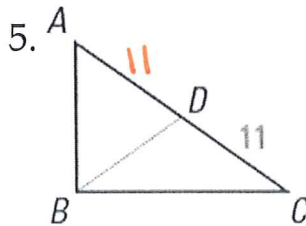
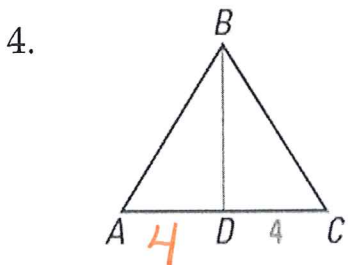
Median HOMEWORK

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 called the **MEDIAN OF A TRIANGLE**. The median of a triangle is the segment from a vertex to the midpoint of the opposite side.

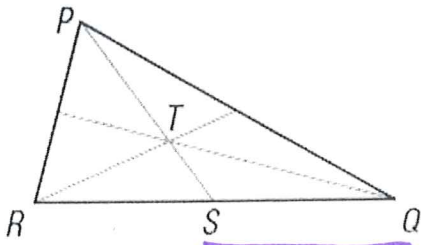
Copy the triangle and draw a median.



\overline{BD} is a median of $\triangle ABC$. Find the length of \overline{AD} .



7. T is the centroid of $\triangle PQR$ and $PS = 33$. Find PT and ST .



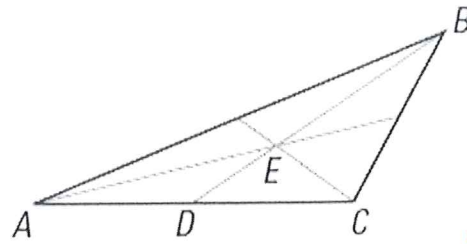
$$PT = \frac{2}{3} PS$$

$$PT = \frac{2}{3} (33)$$

$$PT = 22$$

$$ST = 11$$

8. E is the centroid of $\triangle ABC$ and $BE = 12$. Find BD and ED .



$$BE = \frac{2}{3} (BD)$$

$$12 = \frac{2}{3} x$$

$$18 = BD$$

$$ED = 18 - 12$$

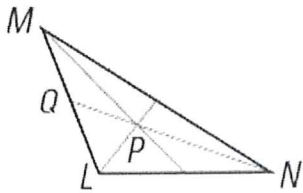
$$ED = 6$$

Using a Centroid P is the centroid of $\triangle LMN$. Find PN and QP .

9. $QN = 9$

10. $QN = 21$

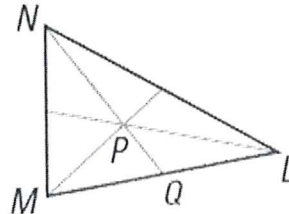
11. $QN = 30$



$$PN = \frac{2}{3} QN$$

$$PN = 6$$

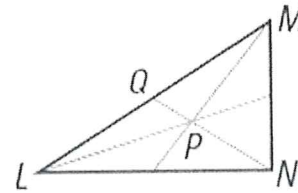
$$QP = 3$$



$$PN = \frac{2}{3} QN$$

$$PN = 14$$

$$PQ = 7$$



$$PN = \frac{2}{3} QN$$

$$PN = 20$$

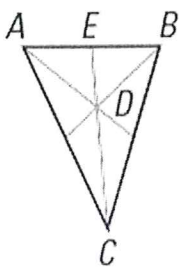
$$QP = 10$$

Using a Centroid D is the centroid of $\triangle ABC$. Find CD and CE .

12. $DE = 5$

13. $DE = 11$

14. $DE = 9$

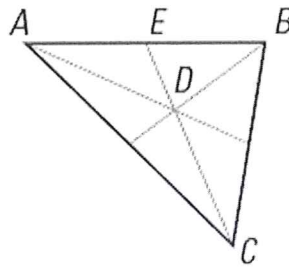


$$DE = \frac{1}{3} CE$$

$$5 = \frac{1}{3} CE$$

$$CE = 15$$

$$CD = 10$$

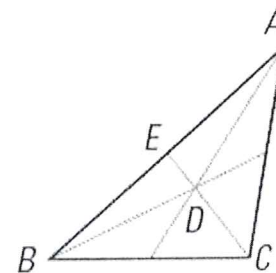


$$DE = \frac{1}{3} CE$$

$$11 = \frac{1}{3} CE$$

$$CE = 33$$

$$CD = 22$$



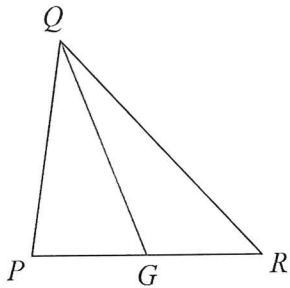
$$DE = \frac{1}{3} CE$$

$$9 = \frac{1}{3} CE$$

$$CE = 27$$

$$CD = 18$$

15. Find x if $PR = 3x + 2$ and $GR = 2x - 2$



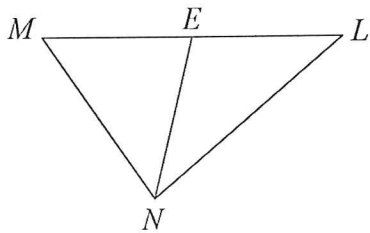
$$PR = 2(GR)$$

$$3x + 2 = 2(2x - 2)$$

$$3x + 2 = 4x - 4$$

$$\boxed{6 = x}$$

16. Find x if $LM = 3 + 3x$ and $EM = 3x - 3$



$$LM = 2(EM)$$

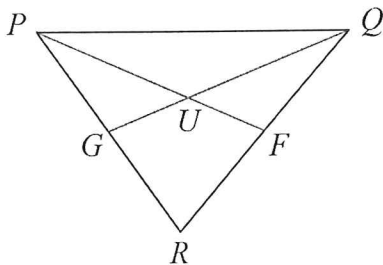
$$3 + 3x = 2(3x - 3)$$

$$3 + 3x = 6x - 6$$

$$9 = 3x$$

$$\boxed{3 = x}$$

17. Find x if $PU = 3x - 7$ and $PF = 3x + 3$



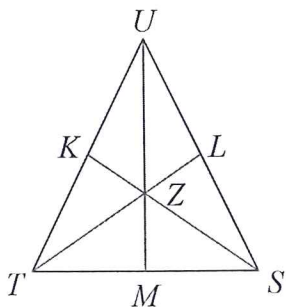
$$PU = \frac{2}{3} PF$$

$$3x - 7 = \frac{2}{3}(3x + 3)$$

$$3x - 7 = 2x + 2$$

$$\boxed{x = 9}$$

18. Find x if $UZ = 3x - 1$ and $ZM = 2x - 1$



$$UZ = 2(ZM)$$

$$3x - 1 = 2(2x - 1)$$

$$3x - 1 = 4x - 2$$

$$\boxed{1 = x}$$

b/c UZ is twice as large as ZM . UZ is $\frac{2}{3}$ the median while ZM is $\frac{1}{3}$ the median