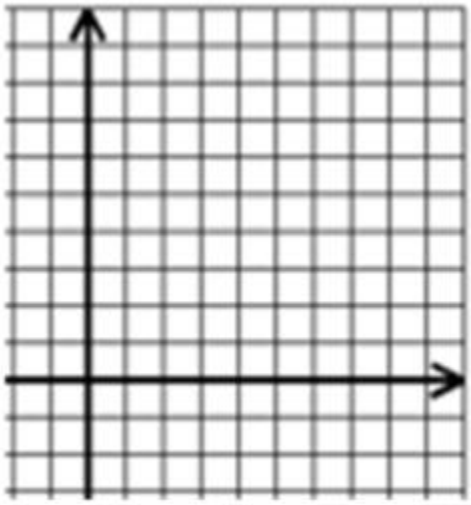
Name: _____Hr:_____ **8.6 Medians in a Triangle**

Graph A, B, and C. Determine the midpoints D, E, and F of each side. Draw the three medians and find the centroid "M". Show that the centroid divides the medians into a2:1 ratio.

1. $A(5,2),\quad B(3,6),\quad C(7,10)$



Midpoint of $\overline{AB}$: Label it "D"

Midpoint of $\overline{BC}$: Label it "E"

Midpoint of $\overline{AC}$: Label if "F"

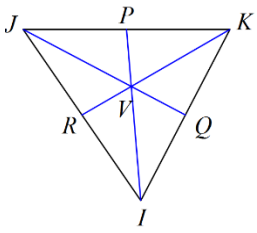
Centroid: Label it "M"

Length of $\overline{CM}$ Length of $\overline{MD}$ Length of $\overline{CD}$

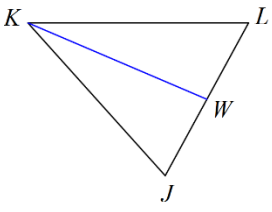
Show that $CM = \frac{2}{3}CD$ Show that $MD = \frac{1}{3}CD$

For problems 2-8 assume the segments that appear to be medians are medians.

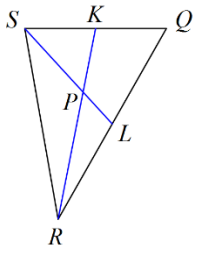
2. Find VR if $KR = 33$



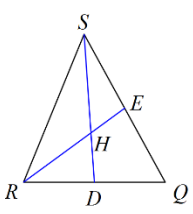
3. Find JL if $WL = 2.1$



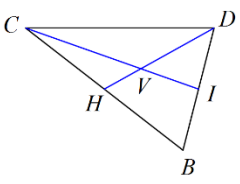
4. Find PL if $SP = 6$



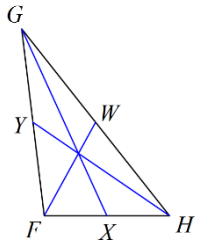
5. Find x if $SH = x - 7$ and $SD = x - 5$



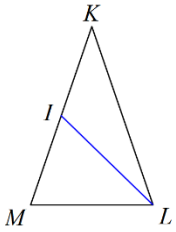
6. Find x if $CI = 5x + 11$ and $VI = 5x - 9$



7. Find GF if $YF = 4$



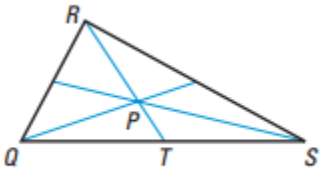
8. Find x if $IM = 2x - 1$ and $IK = x$



9. Given: P is the centroid of $\triangle QRS$

$PT = 5$

Prove: $RT = 15$

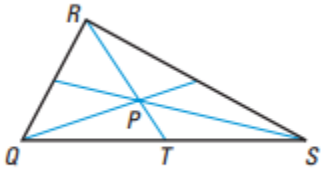


Statement	Reason
1. P is the centroid of $\triangle QRS$	1.
2. $PR = \frac{2}{3}RT$	2.
3. $PR + PT = RT$	3.
4. $\frac{2}{3}RT + PT = RT$	4.
5. $PT = \frac{1}{3}RT$	5.
6. $PT = 5$	6.
7. $5 = \frac{1}{3}RT$	7.
8. $15 = RT$	8.
9. $RT = 15$	9.

10. Given: P is the centroid of $\triangle QRS$

$PR = 26$

Prove: $PT = 13$



Statement	Reason
1. P is the centroid of $\triangle QRS$	1.
2. $PR = \frac{2}{3}RT$	2.
3. $PR = 26$	3.
4. $26 = \frac{2}{3}RT$	4.
5. $39 = RT$	5.
6. $PR + PT = RT$	6.
7. $26 + PT = 39$	7.
8. $PT = 13$	8.