## THE MAGIC OF CENTROIDS!

1. Label the vertices of your triangle ABC

2. Use your ruler to find the midpoint of each side of triangle ABC.

3. Label the midpoint of AB "X", the midpoint of BC "Y" and the midpoint of AC "Z". (put the letters inside the triangle)

4. Using your straightedge connect points X and C, points Y and A and points Z and B. (These lines are your MEDIANS)

5. All 3 medians should intersect at 1 point called the CENTROID. Label this point K.

6. Now perform some magic!

THINK-PAIR-SHARE:

What do you think the relationship is between the lengths of XK and KC? YK and KA? ZK and KB?

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What do you think the relationship is between the lengths of XK and XC? YK and YA? ZK and ZB?

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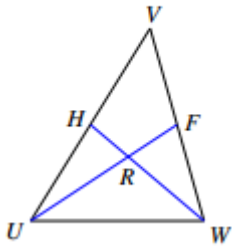What do you think the relationship is between the lengths of AZ and ZC? BY and YC? BX and AX?

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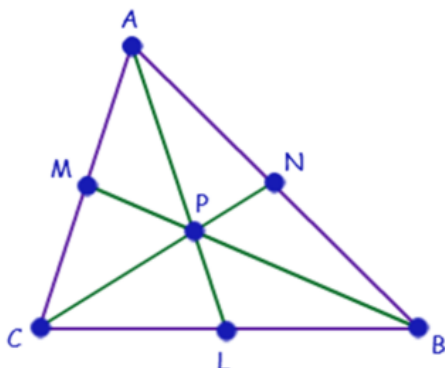
Let's practice! Point P is the centroid of ΔABC.

1. If PN is 2, find PC.

2. If PM=3, find BM.

3. If AP=7x-5 and PL=2x+5, find the value of x.
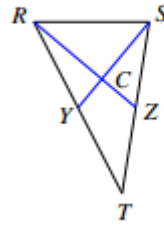
4. If the area of ΔCPL=4, what is the area of ΔABC?

Each figure shows a triangle with one or more of its medians.
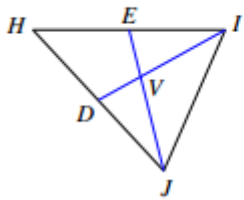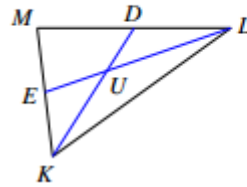
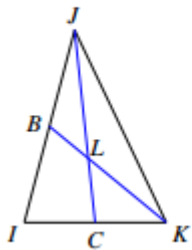1. Find WR if $RH = 2$

2. Find CY if $SY = 33$
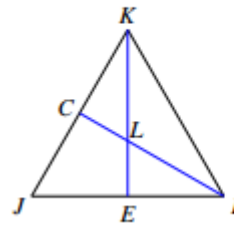
3. Find x if $JV = 3x - 6$ and $VE = 2x - 7$

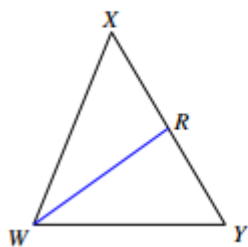4. Find x if $KD = x$ and $UD = -8 + x$

5. Find x if $KL = 4x - 8$ and $KB = 3x + 12$

6. Find x if $KL = 7x + 1$ and $LE = 2x + 5$

7. Find RY if $YX = x - 2$ and $RX = x - 7$

8. Find CS if $CQ = \dfrac{2x - 9}{2}$ and $CS = \dfrac{1 + x}{2}$