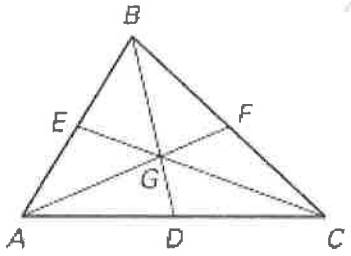
Name _____ Date _____

BD, AF, and EC are medians with G as the centroid of the triangle. For each question, find x.

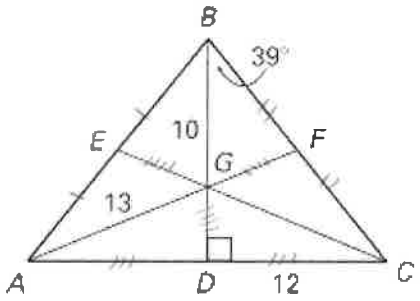
18. $CG = 3x + 7$ and $CE = 6x$

19. $FG = x + 8$ and $AF = 9x - 6$

20. $BG = 5x - 1$ and $DG = 4x - 5$



In the figure E, F, and D are the midpoints of their respective sides.



21. Given that AB=CB, find AD and $\angle ABD$

22. Find GD and BD

23. Name a median

24. Name an angle bisector

25. Name a perpendicular bisector

26. Find EF

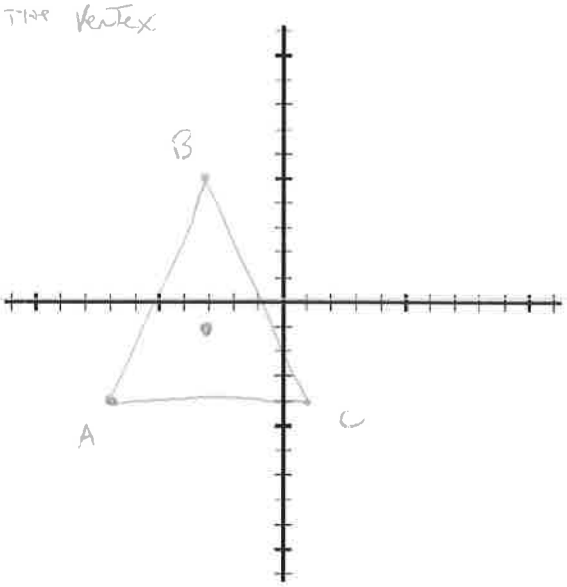
27. AD = 2x – 4. Find x.

Find the coordinates of the centroid P for each triangle.

$\frac{2}{3}$ of way along median from the vertex

RECALL * Partitioning a Directed Line Segment

1. $A(-7, -4), B(-3, 5), C(1, -4)$



① Find median endpoint
for example $\overline{BM}$, find M

$M = (-3, -4)$

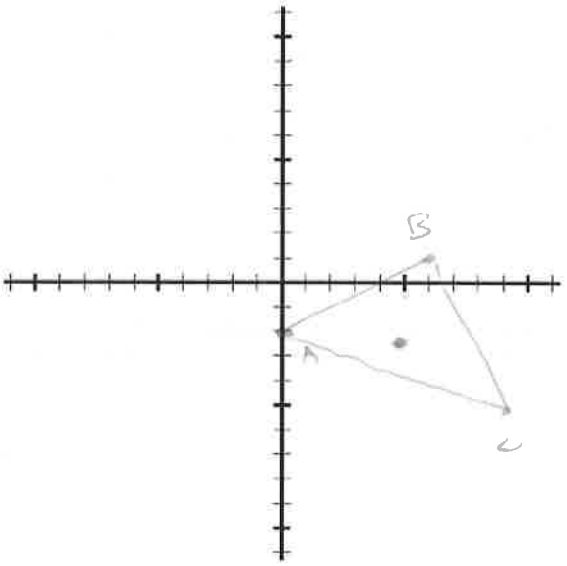
② Partition $\overline{BM}$ $\frac{2}{3}$ of the way

Run = 0 Times $\frac{2}{3}$ = 0 at B: $-3 + 0 = -3$

Rise = -9 Times $\frac{2}{3}$ = -6 at B: $5 + -6 = -1$

Centroid at $(-3, -1)$

2. $A(0, -2), B(6, 1), C(9, -5)$



$\overline{BM}$ → $M(4.5, -3.5)$

$\frac{2}{3}$ of way B → M

Run = $-1.5 \cdot \frac{2}{3} = -1$ $6 + -1 = 5$

Rise = $-4.5 \cdot \frac{2}{3} = -3$ $1 + -3 = -2$

Centroid $(5, -2)$

G is the centroid of △ABC, AD = 8, AG = 10, and CD = 18. Find the length of the segment.

1. $\overline{BD}$ 8
2. $\overline{AB}$ 16
3. EG 5
4. AE 15
5. CG 12
6. DG 6