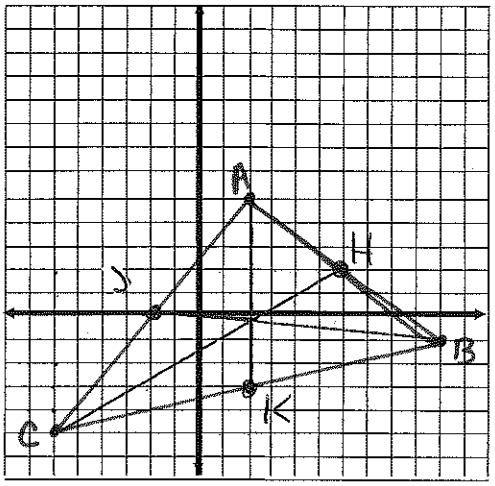
Name: KEY
Period:____ Date:_____

Advanced Geometry
Special Segments of Triangles
Coordinate Plane

MEDIANS

If A(2,5), B(10, -1) and C(-6,-5) are the vertices of ΔABC, find the following.



1) What are the coordinates of H if $\overline{CH}$ is a median of ΔABC? H (6, 2)

2) Slope of $\overline{CH}$ = $\frac{7}{12}$

3) Equation of $\overline{CH}$ $y - 2 = \frac{7}{12}(x - 6)$

4) What are the coordinates of J if $\overline{JB}$ is a median of ΔABC? J (-2, 0)

5) Slope of $\overline{JB}$ = -6

6) Equation of $\overline{JB}$ $y - 0 = -6(x + 2)$

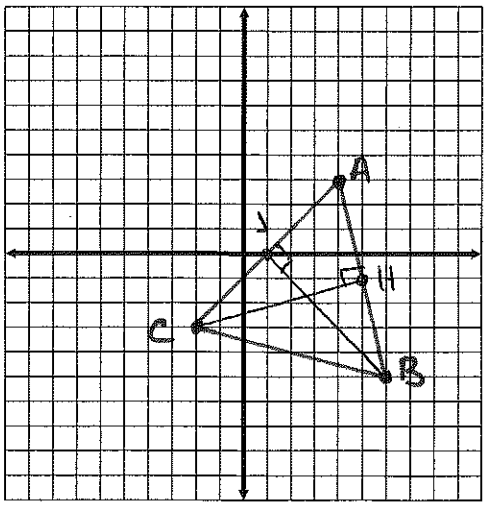
7) What are the coordinates of K if $\overline{KA}$ is a median of ΔABC? K (2, -3)

8) Slope of $\overline{KA}$ = 4

9) Equation of $\overline{KA}$ $y + 3 = 4(x - 2)$

ALTITUDES

If A(4,3), B(6,-5) and C(-2,-3) are the vertices of ΔABC, find the following.



1) If $\overline{CH}$ is an altitude of ΔABC which vertex is a point on $\overline{CH}$? C (-2, -3)

2) Slope of $\overline{AB}$ = -4 ⊥ slope= $\frac{1}{4}$

3) Equation of $\overline{CH}$ $y + 3 = \frac{1}{4}(x + 2)$

4) If $\overline{JB}$ is an altitude of ΔABC which vertex is a point on $\overline{JB}$? B (6, -5)

5) Slope of $\overline{AC}$ = 1 ⊥ slope= -1

6) Equation of $\overline{JB}$ $y + 5 = -1(x - 6)$

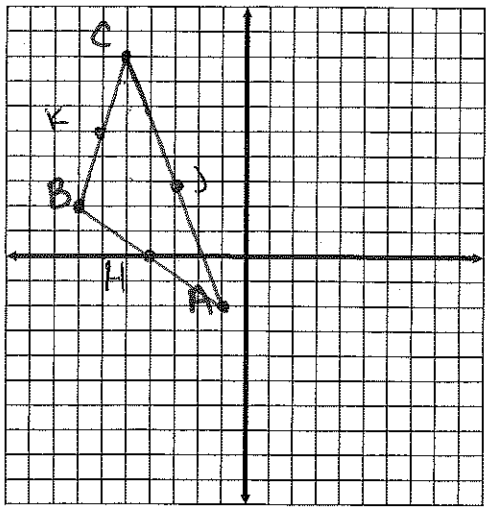
7) If $\overline{KA}$ is an altitude of ΔABC which vertex is a point on $\overline{KA}$? (4, 3) A

8) Slope of $\overline{BC}$ = $-\frac{1}{4}$ ⊥ slope= 4

9) Equation of $\overline{KA}$ $y - 3 = 4(x - 4)$

PERPENDICULAR BISECTORS

If A(-1,-2), B(-7,2) and C(-5,8) are the vertices of ΔABC, find the following.



1) What are the coordinates of H if H is the midpoint of $\overline{AB}$? H $(-4, 0)$

2) Slope of $\overline{AB}$ = $\frac{-2}{3}$ ⊥ slope= $\frac{3}{2}$

3) Equation of ⊥ bisector of $\overline{AB}$

$y - 0 = \frac{3}{2}(x+4)$

4) What are the coordinates of J if J is the midpoint of $\overline{AC}$? J $(-3, 3)$

5) Slope of $\overline{AC}$ = $\frac{-5}{2}$ ⊥ slope = $\frac{2}{5}$

6) Equation of ⊥ bisector of $\overline{AC}$

$y - 3 = \frac{2}{5}(x+3)$

7) What are the coordinates of K if K is the midpoint of $\overline{BC}$? K $(-6, 5)$

8) Slope of $\overline{BC}$ = 3 ⊥ slope = $\frac{-1}{3}$

9) Equation of ⊥ bisector of $\overline{BC}$

$y - 5 = -\frac{1}{3}(x+6)$