5.1-3 RWS #3 By: _____

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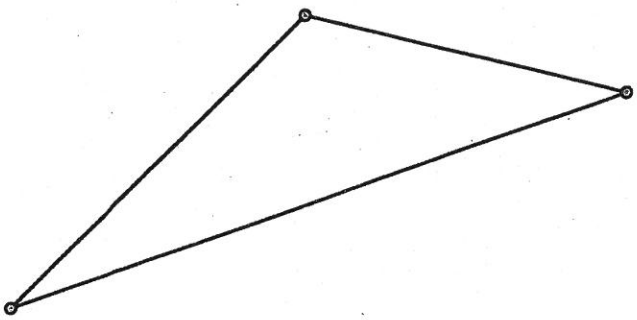
#1-2, use ΔABC with vertices of: A (2,5), B(12, -1), C(-6,8). A sketch may help (2 pt ea)

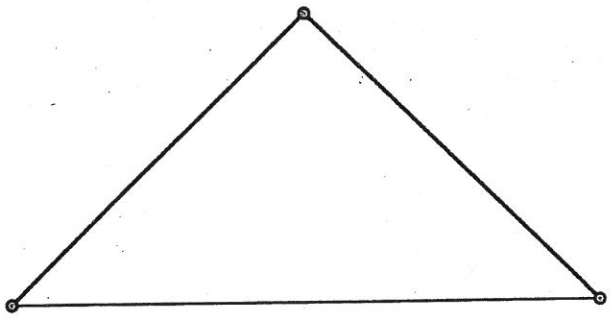
1. What are the coordinates of K if CK is a median of ΔABC

2. What is the slope of the perpendicular bisector of AB?

3. Construct the centroid. (3 pt)



4. Construct an inscribed circle. (3 pt)



#5-6, ΔDSB has vertices of: D (4,1) S (0,3) B(6,4).
Find the equation of the indicated segment. You must show your work. A sketch may help (4 pt ea)

5. Altitude of DS.

6. Median of DB

#7-10, Decide whether each statement is always, sometimes or never true. (1 pt ea)

7. A median bisects an angle.

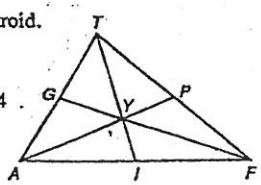
8. A centroid will lie outside the triangle.

9. An altitude will be perpendicular to one side of triangle.

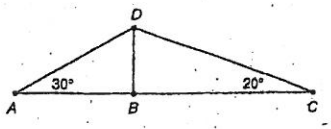
10. The incenter of a right triangle will lie on one of the sides of the triangle.

#11-14, Solve for the missing parts. (2 pt ea - #11 = 3 pt)

11. *Y* is the centroid.
$PY = 8$
$TY = 18$
$FY = AY + 4$
$AY = -?-$
$GY = -?-$
$IY = -?-$



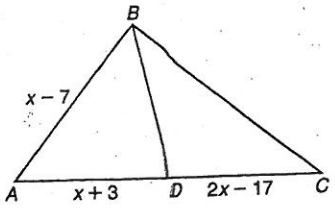
12. $m\angle A = 30°$, $m\angle C = 20°$
$\overline{DB}$ is an altitude of $\triangle ADC$.



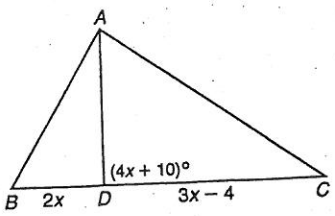
a. Find the measure of $\angle ADB$.

b. Find the measure of $\angle ADC$.

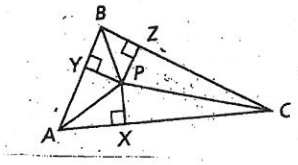
13. Find AB if $\overline{BD}$ is a median of $\triangle ABC$.



14. Find BC if $\overline{AD}$ is an altitude of $\triangle ABC$.



15. P is the incenter of ΔABC. Which must be true? (1 pt)



a. PA = PB

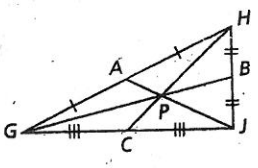
b. YA = YB

c. PX = PY

d. AX = BZ

16. The _____ of a triangle is perpendicular to the line which contains a side of the triangle and connects to the opposite vertex. (1 pt)

#17-20, PA = 2.9 and HC = 10.8. Find each length. (1 pt ea.)



17. PC

18. HP

19. JA

20. JP

21. $\overline{RT}$ is a median in ΔRLB with points R(3,8), T(12,3) and B(9,12).

a. What are the coordinates of L (*careful!*) (2 pt)

b. Is $\overline{RT}$ an altitude in ΔRLB? Explain why or why not. (2 pt)