Geometry CC
6.1-6.4 Review #2

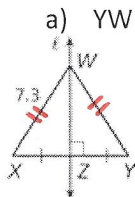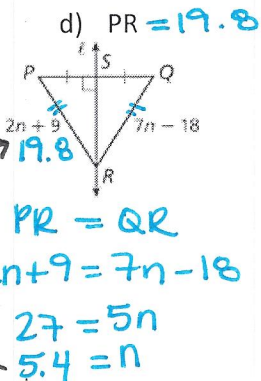**QUIZ HAS BEEN MOVED TO TOMORROW!**

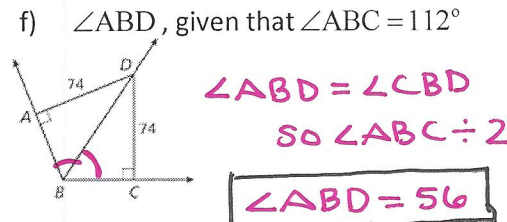**Find each measure:**

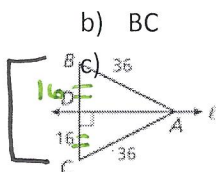a) YW

$XW = YW$

$\boxed{7.3 = YW}$

b) BC

$BD + DC = 16 + 16 = \boxed{32}$

d) PR $= 19.8$

19.8

$PR = QR$

$2n + 9 = 7n - 18$

$27 = 5n$

$5.4 = n$

e) LM

$JM = ML$

$\boxed{12.8 = ML}$

f) $\angle ABD$, given that $\angle ABC = 112°$

$\angle ABD = \angle CBD$

SO $\angle ABC \div 2$

$\boxed{\angle ABD = 56}$

g) $\angle TSU$

$5x + 23 = 6z + 14$
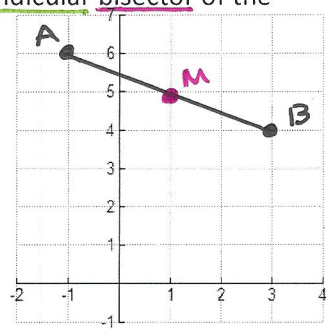
$9 = z$

68°

7. Write an equation in point-slope form, $y - y_1 = m(x - x_1)$, for the perpendicular bisector of the segment with endpoints A(-1, 6) and B(3, 4).

Midpoint $\left(\dfrac{-1+3}{2}, \dfrac{6+4}{2}\right) = (1, 5)$
                                              $x_1 \, y_1$

AB slope $= \dfrac{-2}{4} = -\dfrac{1}{2} \rightarrow \perp$ slope $= 2$
                                                              m
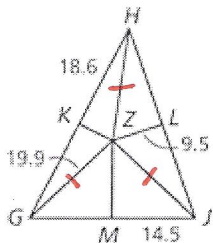
$\boxed{y - 5 = 2(x - 1)}$

8. KZ, LZ, and MZ are perpendicular bisectors of $\triangle GHJ$. Find HZ.
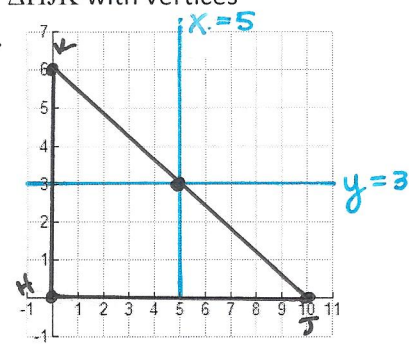
Z is the circumcenter

SO HZ = JZ = GZ

$\boxed{HZ = 19.9}$

9. Find the circumcenter of $\triangle HJK$ with vertices H(0, 0), J(10, 0), and K(0, 6).

*Need perpendicular bisectors.

$\boxed{(5, 3)}$

$x = 5$

$y = 3$
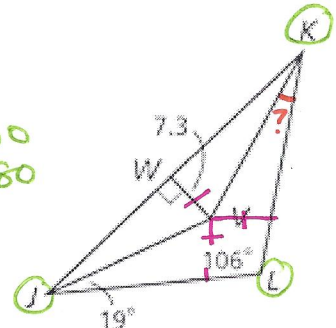
10. JV and KV are angle bisectors of $\triangle JKL$. Find each measure:

V is the incenter.

a) The distance from V to KL

$VW = $ V to KL $=$ V to JL

$7.3 = \boxed{7.3} = 7.3$

b) $\angle VKL$

$\angle K + \angle J + \angle L = 180$

$\angle K + 38 + 106 = 180$

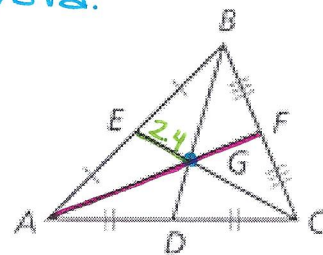$\angle K = 36$

$\angle VKL = \dfrac{36}{2} = \boxed{18°}$

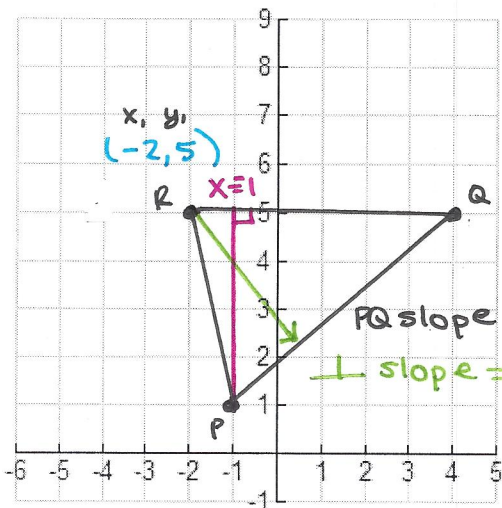11. In $\triangle ABC$, AF = 9 and GE = 2.4. Find each length: G is the centroid.

a) AG $= \dfrac{2}{3}(AF) = \dfrac{2}{3}(9) = \boxed{6}$

b) CE

$GE = \dfrac{1}{3}CE \rightarrow 2.4 = \dfrac{1}{3}CE \rightarrow \boxed{7.2 = CE}$

12. Find the orthocenter of a triangle with the given vertices: P(-5, 8), Q(4, 5), R(-2, 5).

P(-1, 1)

x_1, y_1

(-2, 5)

X=1

PQ slope = 4/5

⊥ slope = -5/4

$y - y_1 = m(x - x_1)$

$y - 5 = \dfrac{-5}{4}(x - (-2))$

$y - 5 = -\dfrac{5}{4}(-1 + 2)$

$y - 5 = -\dfrac{5}{4}(1) \rightarrow y = \dfrac{15}{4}$ or 3.75

$\boxed{(-1, 15/4)\text{ orthocenter}}$

13. Find each measure: PQ & QR are midsegments

a) GJ $\rightarrow$ PQ $= \dfrac{1}{2}$ GJ

$19 = \dfrac{1}{2}GJ \rightarrow \boxed{38 = GJ}$

b) RQ $\rightarrow$ RQ $= \dfrac{1}{2}$ HG

$RQ = \dfrac{1}{2}(27) \rightarrow \boxed{RQ = 13.5}$

c) RJ = GR

$GJ = RJ + GR \rightarrow GJ \div 2 = RJ$

$\boxed{19 = RJ}$

d) ∠PQR

55°

e) ∠HGJ

55°

f) ∠GPQ

∠GPQ + ∠PQR = 180

∠GPQ + 55 = 180

$\boxed{\angle GPQ = 125°}$