Geometry
Review 5.1-5.3

★ Make new key for next year!!

Name Answer key

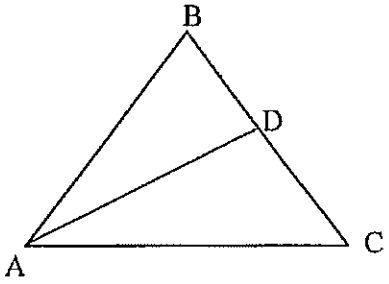
1. With the given description, decide if $\overline{AD}$ is a perpendicular bisector, angle bisector, median, or altitude.

a) $\overline{DB} \cong \overline{DC}$ median

b) $\angle BAD \cong \angle CAD$ angle bisector

c) $\overline{DB} \cong \overline{DC}$ and $\overline{AD} \perp \overline{BC}$ perpendicular bisector

d) $\overline{AD} \perp \overline{BC}$ altitude



2. Use the diagram to answer the questions. $\overrightarrow{CG}$ bisects $\angle BCD$, GB = 3, $m\angle BCG = 30°$, FA = 8, FE = 8

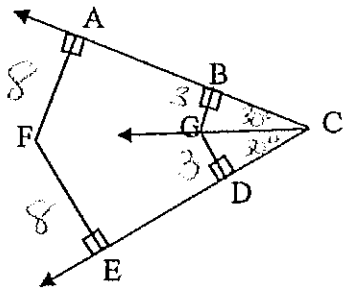
a) GD = 3

b) $m\angle GCD = 30°$

c) $m\angle BCD = 60°$

d) Does F lie on the angle bisector? Why or why not?

Yes, because the distances from the point F to each side of the angle are the same.



3. Find the missing lengths of the triangle. G is the centroid of $\triangle ABC$. AD = 15, CG = 13, $\overline{AD} \perp \overline{CB}$

medians

a) AG = 10

b) GD = 5

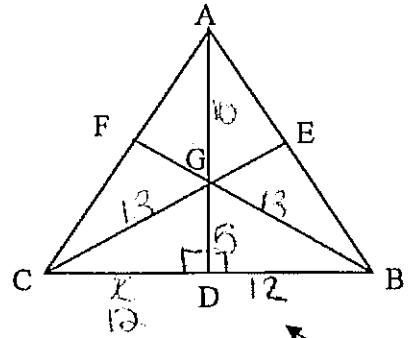
c) CD = 12

d) GE = 6.5

e) GB = 13

$x^2 + 5^2 = 13^2$
$x^2 + 25 = 169$
$x^2 = 144$
$x = 12$

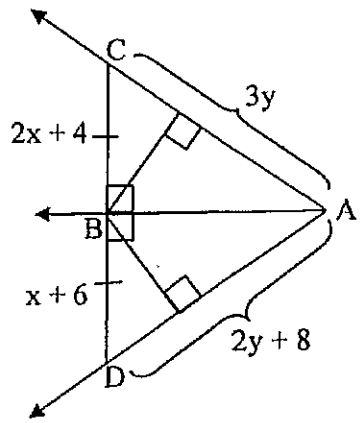
f) perimeter of $\triangle GCD$
13 + 12 + 5 = 30



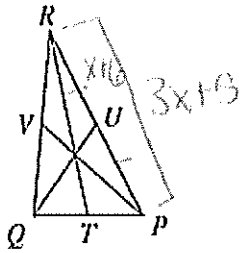
4. $\overrightarrow{AB}$ is the perpendicular bisector of $\overline{CD}$. $\overrightarrow{AB}$ bisects $\angle CAD$.

a) Find the value of x. $2x + 4 = x + 6$ $x = 2$

b) Find the value of y. $3y = 2y + 8$ $y = 8$



5. Given that RT, QU and VP are medians. Centroid



a) If RP = 3x + 5 and RU = x + 6, find the value of x.

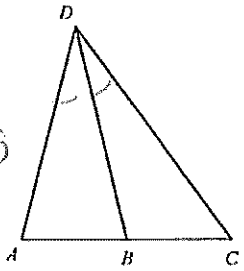
$3x+5 = 2(x+6)$
$3x+5 = 2x+12$
$x = 7$

b) If TP = 2a + 1 and TQ = 3a – 5, find the length of QP.

$2a+1 = 3a-5$
$6 = a$

$QP = 2a+1+3a-5$
$2(6)+1+3(6)-5$
$12+1+18-5$
$QP = 26$

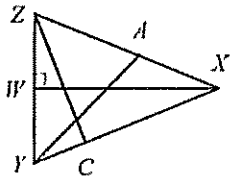
6. If BD is an angle bisector of ΔABC, m∠ADB = 2x – 10 and m∠CDB = x + 15, find the measure of ∠ADC.



$2x-10 = x+15$
$x = 25$

$m\angle ADC = 2(25)-10+25+15$
$50-10+40$
$m\angle ADC = 80$

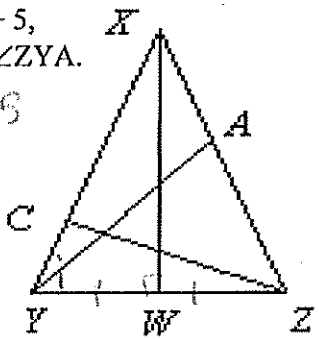
7. If XW is an altitude of ΔXYZ, ZW = 5x -12, WY = 3x + 5 and m∠ZWX = 30x, find the value of WY.



$30x = 90$
$x = 3$

$WY = 3(3)+5$
$9+5$
$WY = 14$

8. If $\overline{XW}$ is a perpendicular bisector and $\overline{AY}$ is an angle bisector of ΔXYZ, YW = 3x + 5, m∠XWY = 10x + 30, m∠XYZ = 9z + 38 and m∠XYA = 10z – 14. Find WZ and m∠ZYA.



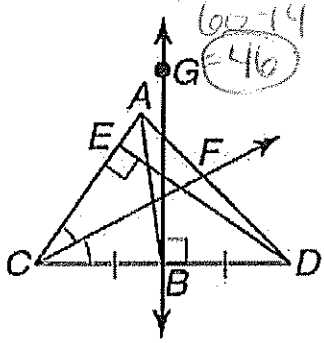
$10x+30 = 90$
$10x = 60$
$x = 6$

$9z+38 = 2(10z-14)$
$9z+38 = 20z-28$
$66 = 11z$
$6 = z$

$WZ = 3(6)+5$
$18+5$
$WZ = 23$

$m\angle ZYA = 10(6)-14$
$60-14$
$m\angle ZYA = 46$

9. Refer to the figure below



a) Name the altitude.
DE altitude.

b) Name the median.
AB median

c) Name the perpendicular bisector.
$\overleftrightarrow{CB}$ ⊥ bisects CD

d) Name the angle bisector.
$\overrightarrow{CF}$ bisects ∠ACD

10. Name the point of concurrency for each special segment. STUDY YOUR CHART!!!