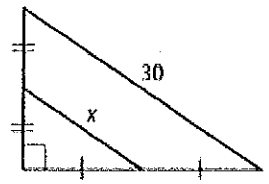
Geometry 22 **Review 5.1-5.4** Name ANSWERS per____

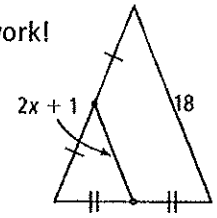
1 Find the value of x.

1)



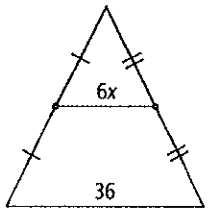
x = 15

2) show work!



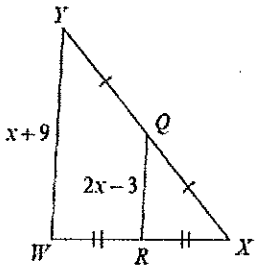
$2(2x+1)=18$
$4x+2=18$
$4x=16$
x = 4

3.



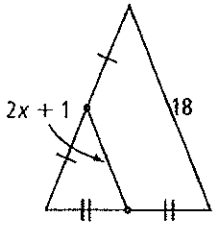
$2(6x)=36$
$12x=36$
$x=3$

4.



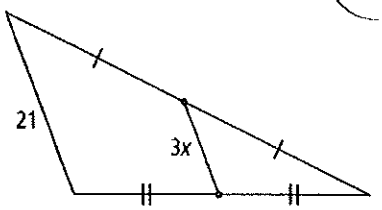
$2(2x-3)=x+9$
$4x-6=x+9$
$3x=15$
$x=5$

5.



$2(2x+1)=18$
$4x+2=18$
$4x=16$
$x=4$

6.



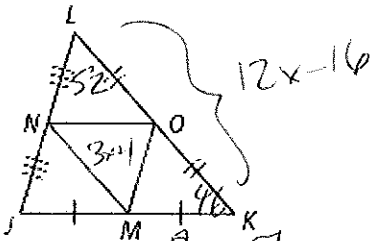
$2(3x)=21$
$6x=21$
$x=3.5$

➔ Use the diagram to the right and the following information...

If LK = 12x – 16 cm, NM = 3x + 1

a) X = 3 $2(3x+1)=12x-16$ $6x+2=12x-16$ $18=6x$ b) OK = 10

If MK = 5x – 7 , how long is MK? c) MK = 8



Using all the previous information, and NO = 2y,

c) y = 4 $2y=8$ d) JK = 16

If m<L = 52°, m< K = 46°

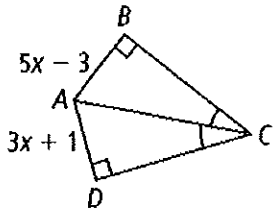
$52+46+m\angle J=180$
$98+m\angle J=180$

e) m< J = 82° f) m< LNO = 82° $m\angle J=82$

g) m< OMK = 82°

5.2

7) Solve for x.



$5x - 3 = 3x + 1$

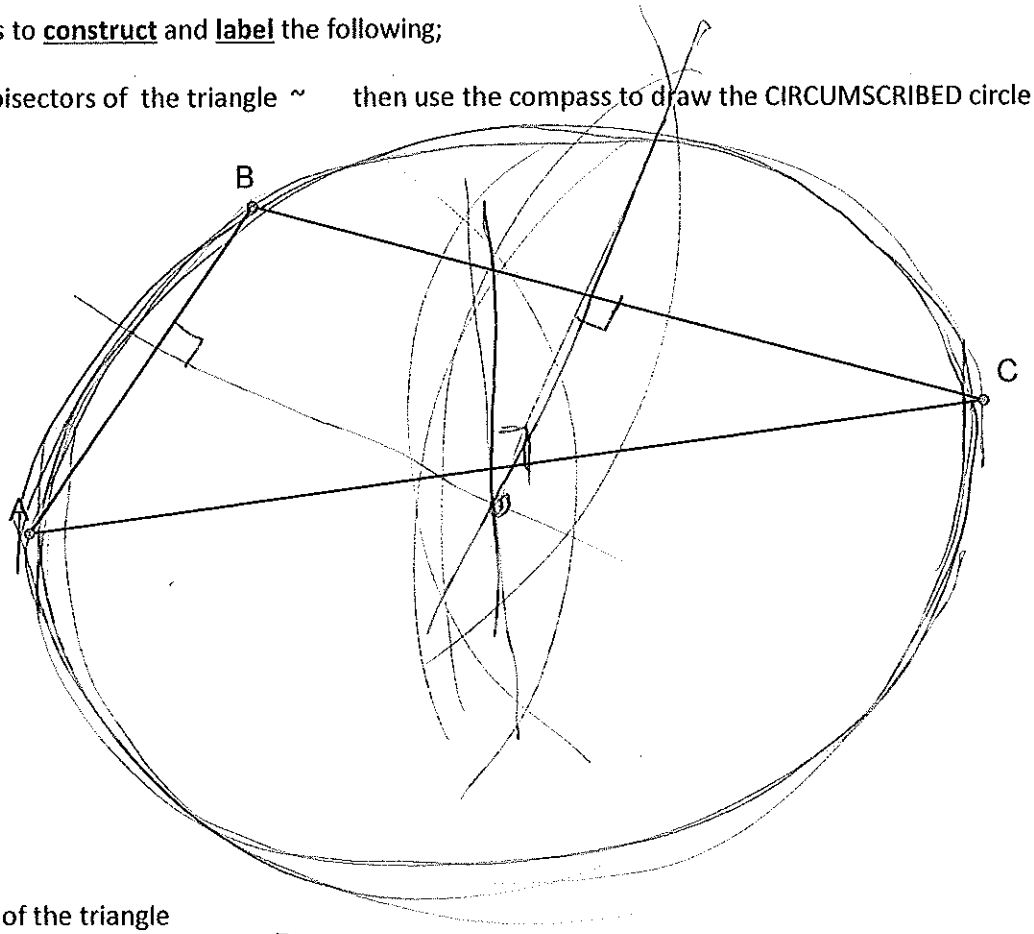
$2x = 4$

$x = 2$

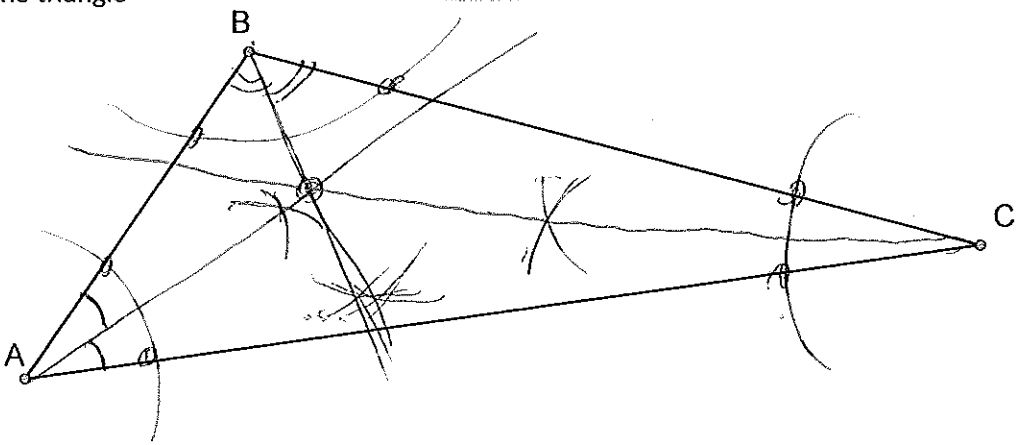
x = 2

5.3 Use a compass to **construct** and **label** the following;

8) perpendicular bisectors of the triangle ~ then use the compass to draw the CIRCUMSCRIBED circle of ABC



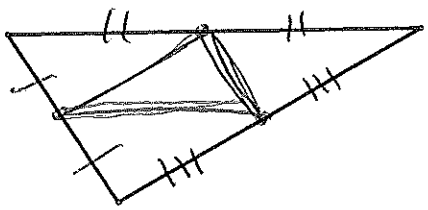
9) angle bisectors of the triangle



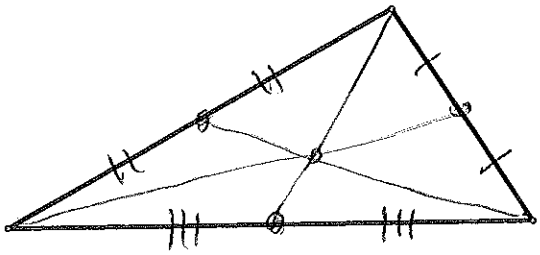
10. When the 3 bisectors all intersect at one point, that point is called a point of concurrency.

WITHOUT using a compass, just SKETCH all 3 of each type of segments for each triangle. LABEL diagrams with appropriate congruent markings and/or perpendicular markings.

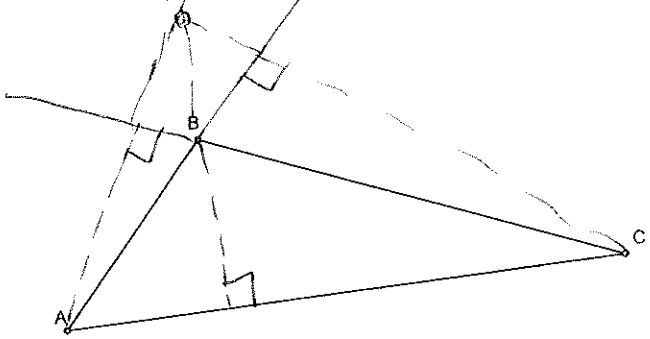
11. MIDSEGMENTS



12. MEDIANS



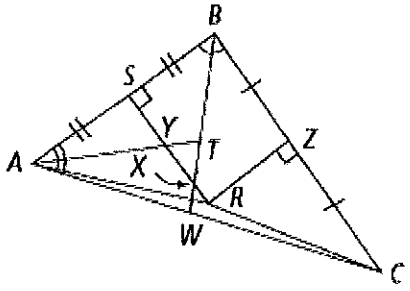
13. ALTITUDES (***remember, altitudes may be on the OUTSIDE of the triangle!)



Use the diagram to the right...

14) Name a perpendicular bisector $\overline{RZ}$ or $\overline{YS}$

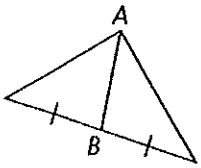
15) Name an angle bisector $\overline{WB}$ or $\overline{TA}$



16) To find the point that is equidistant from the 3 vertices of the triangle, you would find the point where the 3 Perpendicular bisectors intersect.

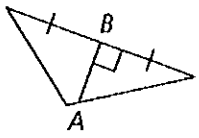
Is $\overline{AB}$ a median, an altitude, a perpendicular bisector, angle bisector or none of these? How do you know?

17. median



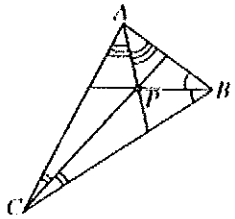
18. altitude

19. 1 bisector

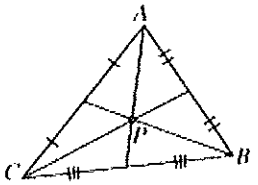


20. Which diagram shows a point *P* an equal distance from points *A*, *B*, and *C*?

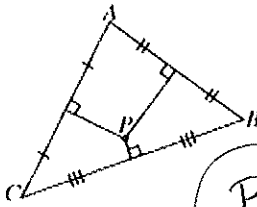
A.



C.

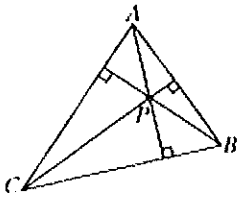


B.



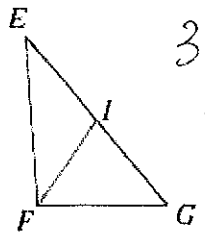
B

D.



21) ***In each diagram, the segments drawn are MEDIANS of the triangle.***

a) If GE = 3x + 5, and GI = 2x – 1



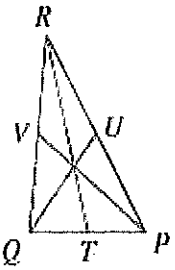
$3x+5 = 2(2x-1)$

$3x+5 = 4x-2$

$7 = x$

x = 7 GI = 13 GE = 26

b) QV = 32x – 12, and RV = 21x + 10



$32x-12 = 21x+10$

$-21x$

$11x = 22$

$x = 2$

x = 2 QV = 52 RV = 52

$32(2)-12$

$64-12$

52

$21(2)+10$

$42+10$

52

Kuta Software - Infinite Geometry

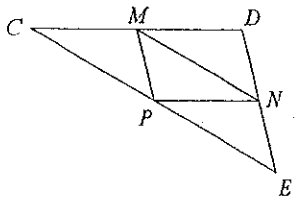
Name ANSWERS

Midsegment of a Triangle

Date _____ Period ____

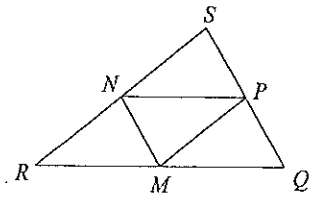
In each triangle, M, N, and P are the midpoints of the sides. Name a segment parallel to the one given.

1)



$\overline{CD} \parallel \overline{PN}$

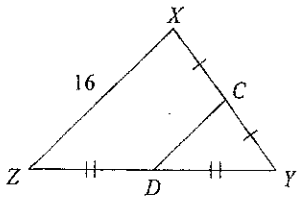
2)



$\overline{MN} \parallel \overline{QS}$

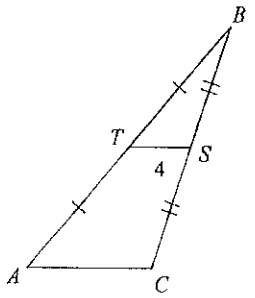
Find the missing length indicated.

3) Find *CD*



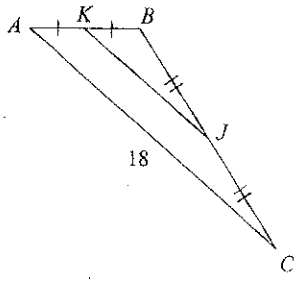
CD = 8

4) Find *AC*



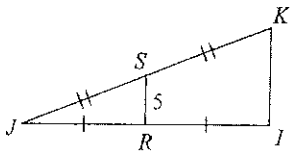
AC = 8

5) Find *KJ*



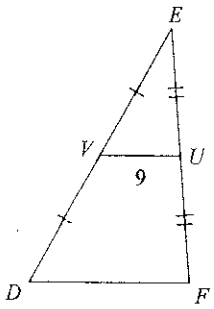
KJ = 9

6) Find *IK*



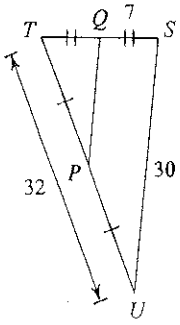
IK = 10

7) Find *DF*



DF = 18

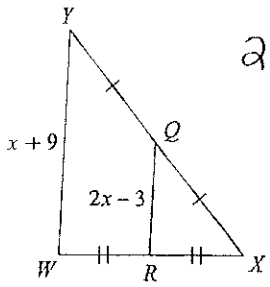
8) Find *PQ*



PQ = 15

Solve for x.

9)



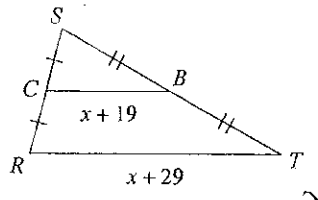
$2(2x-3) = x+9$

$4x-6 = x+9$

$3x = 15$

$x = 5$

10)

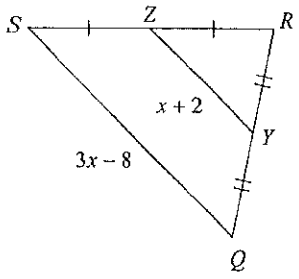


$2(x+19) = x+29$

$2x+38 = x+29$

$x = -9$

11)

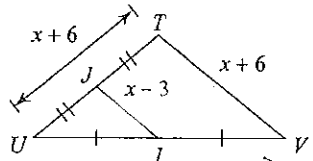


$2(x+2) = 3x-8$

$2x+4 = 3x-8$

$12 = x$

12)



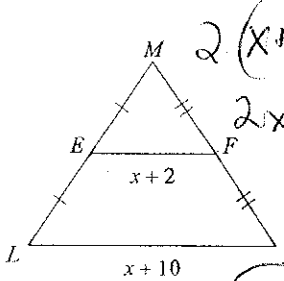
$2(x-3) = x+6$

$2x-6 = x+6$

$x = 12$

Find the missing length indicated.

13) Find LN



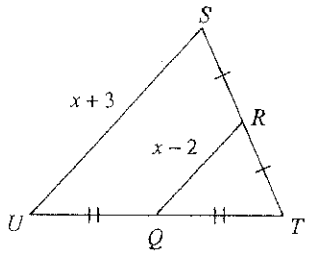
$2(x+2) = x+10$

$2x+4 = x+10$

$x = 6$

$LN = 16$

14) Find RQ



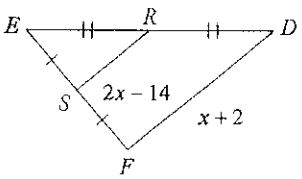
$2(x-2) = x+3$

$2x-4 = x+3$

$x = 7$

$RQ = 7-2 = 5$

15) Find SR



$2(2x-14) = x+2$

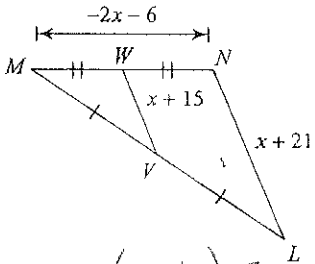
$4x-28 = x+2$

$3x = 30$

$x = 10$

$SR = 2(10)-14 = 6$

16) Find VW



$2(x+15) = x+21$

$2x+30 = x+21$

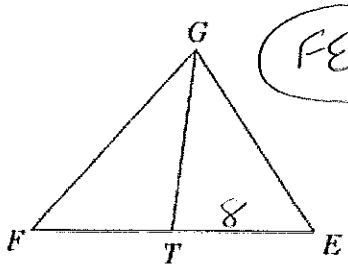
$x = -9$

$VW = 6$

Practice using **MEDIANS and ANGLE BISECTORS** of TRIANGLES Name ANSWERS

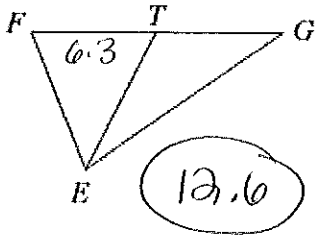
Each figure shows a triangle with one or more of its medians.

1) Find FE if $TE = 8$



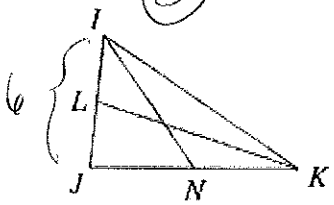
FE = 16

2) Find GF if $TF = 6.3$



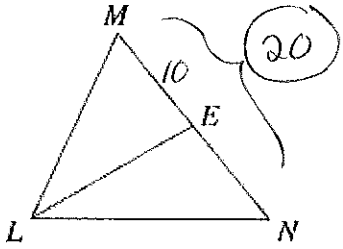
12.6

3) Find LJ if $IJ = 6$



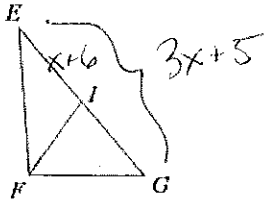
3

4) Find NM if $EM = 10$



20

11) Find x if $GE = 3x + 5$ and $IE = x + 6$



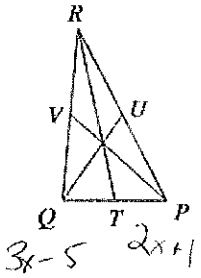
$3x+5$

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

$2x+12 = 3x+5$

$7 = x$

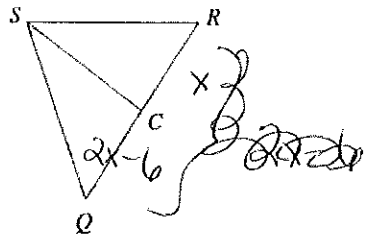
12) Find x if $TP = 2x + 1$ and $TQ = 3x - 5$



$3x - 5 = 2x + 1$

$x = 6$

15) Find CQ if $CR = x$ and $CQ = 2x - 6$

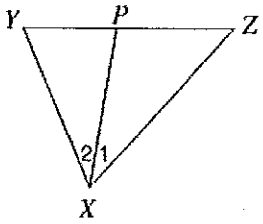


$x = 2x - 6$

$6 = x$

Each figure shows a triangle with one of its angle bisectors.

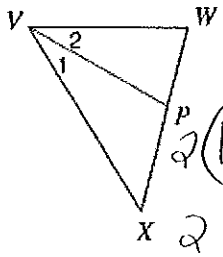
13) Find x if $m\angle 2 = 4x + 5$ and $m\angle 1 = 5x - 2$.



$4x + 5 = 5x - 2$

$7 = x$

14) Find x if $m\angle 2 = 1 + 28x$ and $m\angle XVW = 59x - 1$.

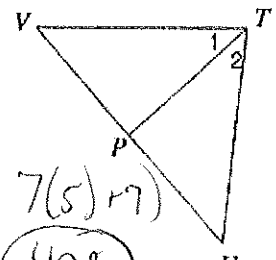


$2(1 + 28x) = 59x - 1$

$2 + 56x = 59x - 1$

$X = 1$ $\quad 3 = 3x$

15) $m\angle 1 = 7x + 7$ and $m\angle VTU = 16x + 4$. Find $m\angle 1$.



$2(7x + 7) = 16x + 4$

$14x + 14 = 16x + 4$

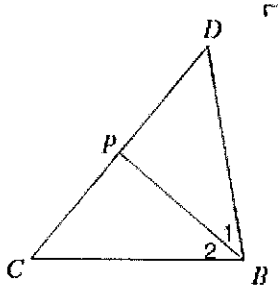
$10 = 2x$

$X = 5$

$m\angle 1 = 7(5) + 7$

$42°$

16) Find $m\angle 2$ if $m\angle 2 = 7x + 5$ and $m\angle 1 = 9x - 5$.



$7x + 5 = 9x - 5$

$10 = 2x$

$x = 5$

$m\angle 2 = 7(5) + 5$

$40°$

17) use a compass and straightedge for the following. If you don't have one, then just sketch and mark your diagram appropriately to show how you found the point that is equidistant from all of the schools.

Warde, Ludlowe, and Staples are playing in a tournament. The one requirement is that the tournament must be at a site that is equidistant from all schools. find the point on the map in which the event should be held. Show all work!

Use the black dots as the school locations...