1, 7, 19 .
3, 13, 24

Geometry

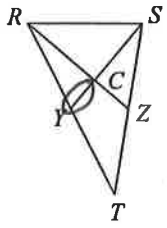
Name "1st part answers."

Medians and a centroid

Date 12/13/12 Period ____

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

1) Find CY if $SY = 33$

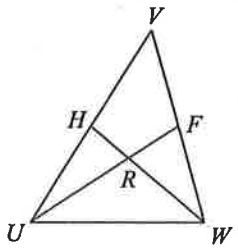


$CY = \frac{1}{3}(SY)$

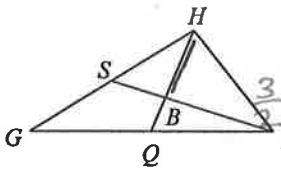
$CY = \frac{1}{3}(33)$

$CY = 11$

2) Find WR if $RH = 2$



3) Find HQ if $HB = 4.8$

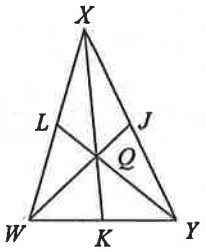


$HB = \frac{2}{3}(HQ)$

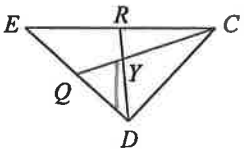
$4.8 = \frac{2}{3}(HQ) \cdot \frac{3}{2}$

$7.2 = HQ$

4) Find QJ if $WQ = 5$



5) Find DY if $DR = 16.5$

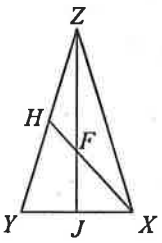


$DY = \frac{2}{3}(DR)$

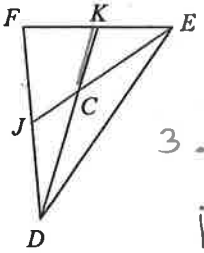
$DY = \frac{2}{3}(16.5)$

$DY = 11$

6) Find FJ if $ZF = 6$



7) Find DK if $CK = 12$

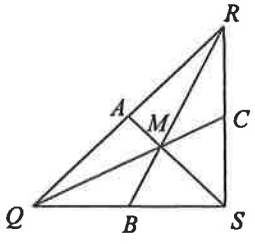


$CK = \frac{1}{3}(DK)$

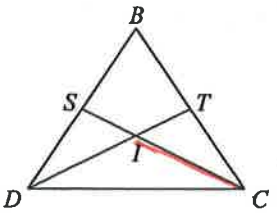
$12 = \frac{1}{3}(DK) \cdot 3$

$36 = DK$

8) Find QM if $MC = 7$



9) Find CI if $CS = 6$



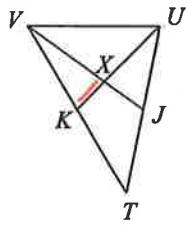
$CI = \frac{2}{3}(CS)$

$CI = \frac{2}{3}(6)^2$

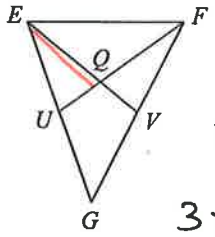
$\boxed{CI = 4}$

whoops Y not counted.

10) Find XK if $UX = 8$



11) Find x if $EQ = x + \frac{4}{5}$ and $EV = \frac{8}{5}x + \frac{1}{10}$



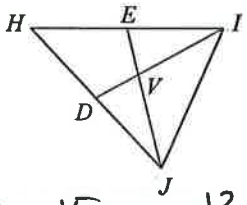
$EQ = \frac{2}{3}(EV)$

$x + \frac{4}{5} = \frac{2}{3}\left(\frac{8}{5}x + \frac{1}{10}\right)$

$3x + \frac{12}{5} = 2\left(\frac{8}{5}x + \frac{1}{10}\right)$

$3x + \frac{12}{5} = \frac{16}{5}x + \frac{2}{10}$

12) Find x if $JV = 3x - 6$ and $VE = 2x - 7$

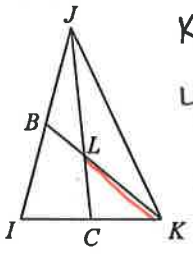


$\frac{15}{5}x + \frac{12}{5} = \frac{16}{5}x + \frac{1}{5}$

$15x + 12 = 16x + 1$

$\boxed{11 = x}$

13) Find x if $KL = 4x - 8$ and $KB = 3x + 12$



$KL = \frac{2}{3}(KB)$

$4x - 8 = \frac{2}{3}(3x + 12)$

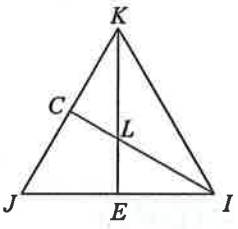
$4x - 8 = 2(x + 4)$

$4x - 8 = 2x + 8$

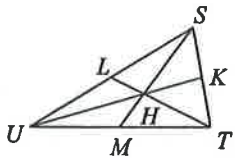
$2x = 16$

$\boxed{x = 8}$

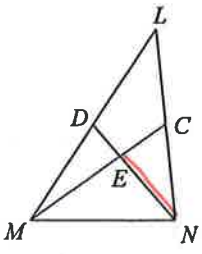
14) Find x if $KL = 7x + 1$ and $LE = 2x + 5$



15) Find x if $SM = 2x + 2$ and $HM = 2x - 2$



16) Find x if $NE = x + 4$ and $ND = 2x$



$NE = \frac{2}{3}(ND)$

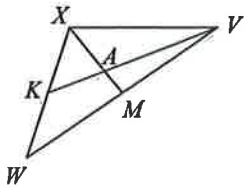
$x + 4 = \frac{2}{3}(2x)$

$3(x + 4) = 2(2x)$

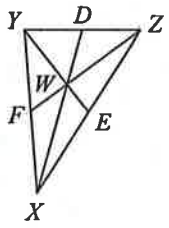
$3x + 12 = 4x$

$\boxed{12 = x}$

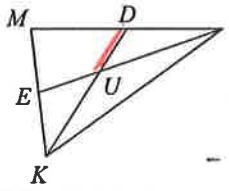
17) Find x if $VA = x + 4$ and $AK = x - 1$



18) Find x if $ZW = -6 + 2x$ and $WF = 2x - 9$



19) Find x if $KD = x$ and $UD = -8 + x$



$UD = \frac{1}{3}(KD)$

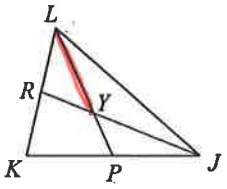
$-8 + x = \frac{1}{3}(x)$

$-24 + 3x = x$

$-24 = -2x$

$\boxed{12 = x}$

20) Find x if $LY = 4x$ and $LP = 5x + 1$



$LY = \frac{2}{3}(LP)$

$4x = \frac{2}{3}(5x+1)$

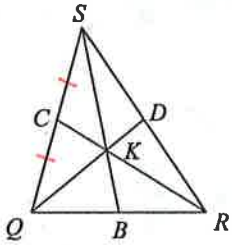
$12x = 2(5x+1)$

$12x = 10x + 2$

$2x = 2$

$\boxed{x = 1}$

21) Find CS if $CQ = \frac{2x-9}{2}$ and $CS = \frac{1+x}{2}$



$CQ = CS$

$\frac{2x-9}{2} = \frac{1+x}{2}$

$2x - 9 = 1 + x$

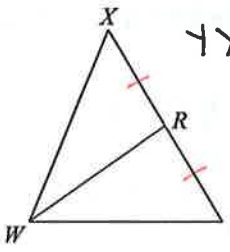
$x = 10$

$CS = \frac{1+x}{2}$

$= \frac{1+10}{2}$

$\boxed{CS = \frac{11}{2}}$

22) Find RY if $YX = x - 2$ and $RX = x - 7$



$YX = 2(RX)$

$x - 2 = 2(x - 7)$

$x - 2 = 2x - 14$

$12 = x$

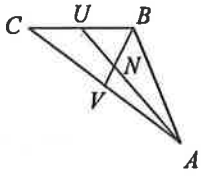
$RY = RX$

$RY = x - 7$

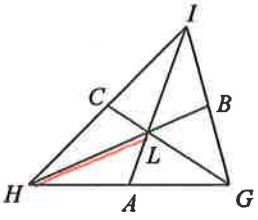
$RY = 12 - 7$

$\boxed{RY = 5}$

23) Find AN if $AN = x + 4$ and $NU = \frac{2x-1}{2}$



24) Find HL if $HL = 3x + 1$ and $HB = 7x - 1$



$HL = \frac{2}{3}(HB)$

$3x + 1 = \frac{2}{3}(7x - 1)$

$3(3x+1) = 2(7x-1)$

$9x + 3 = 14x - 2$

$5 = 5x$

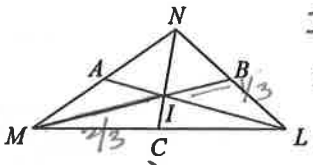
$1 = x$

$HL = 3x + 1$

$HL = 3(1) + 1$

$\boxed{HL = 4}$

25) Find MI if $MB = x + 9$ and $IB = 2x - 7$



$IB = \frac{1}{3}(MB)$

$2x - 7 = \frac{1}{3}(x + 9)$

$3(2x - 7) = 1(x + 9)$

$6x - 21 = x + 9$

$5x = 30$

$x = 6$

$MI = \frac{2}{3}(MB)$

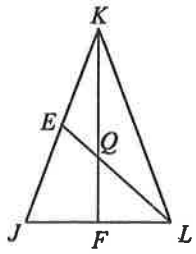
$MI = \frac{2}{3}(x + 9)$

$MI = \frac{2}{3}(6 + 9)$

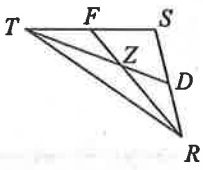
$MI = \frac{2}{3}(15)^5$

$MI = 10$

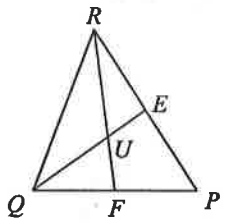
26) Find LQ if $LQ = x - 6$ and $QE = x - 8$



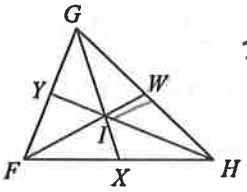
27) Find ZD if $TZ = 2x - 6$ and $TD = x + 9$



28) Find QE if $QU = x - 4$ and $UE = x - 8$



29) Find IW if $FW = 10x$ and $IW = 2x + 4$



$Iw = \frac{1}{3}(Fw)$

$2x + 4 = \frac{1}{3}(10x)$

$3(2x + 4) = 10x$

$6x + 12 = 10x$

$12 = 4x$

$3 = x$

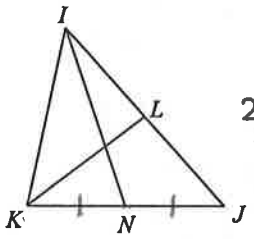
$Iw = 2x + 4$

$Iw = 2(3) + 4$

$Iw = 6 + 4$

$Iw = 10$

30) Find NK if $NJ = \frac{2x - 3}{4}$ and $NK = \frac{x}{4}$



$NJ = NK$

$\frac{2x - 3}{4} = \frac{x}{4}$

$2x - 3 = x$

$x = 3$

$NK = \frac{x}{4}$

$NK = \frac{3}{4}$