Geometry

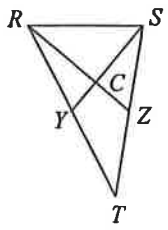
Name "Part 2 Solutions"

Medians and a centroid

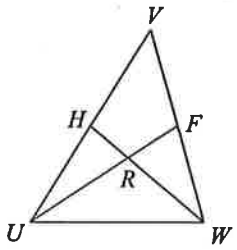
Date_____ Period____

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

1) Find CY if $SY = 33$



2) Find WR if $RH = 2$

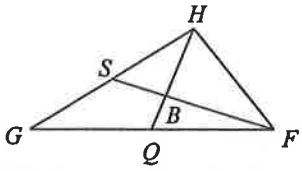


$WR = 2(RH)$

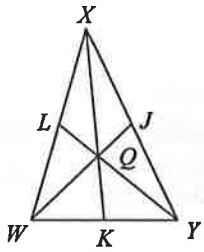
$WR = 2(2)$

$WR = 4$

3) Find HQ if $HB = 4.8$



4) Find QJ if $WQ = 5$

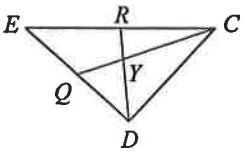


$WQ = 2(QJ)$

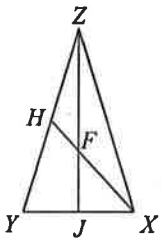
$5 = 2(QJ)$

$\frac{5}{2} = QJ$

5) Find DY if $DR = 16.5$



6) Find FJ if $ZF = 6$

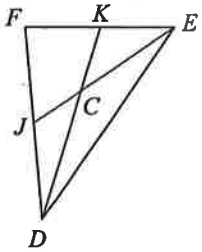


$ZF = 2(FJ)$

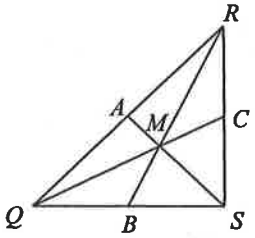
$6 = 2(FJ)$

$3 = FJ$

7) Find DK if $CK = 12$



8) Find QM if $MC = 7$

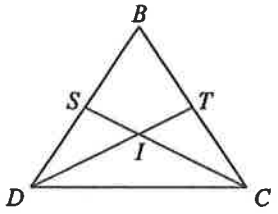


$QM = 2(MC)$

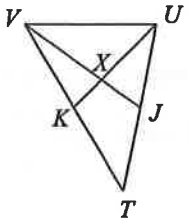
$QM = 2(7)$

$QM = 14$

9) Find CI if $CS = 6$



10) Find XK if $UX = 8$

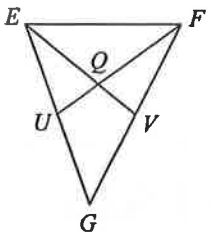


$UX = 2(XK)$

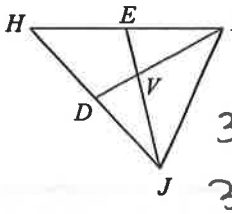
$8 = 2(XK)$

$\boxed{4 = XK}$

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



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



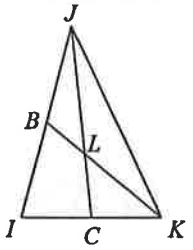
$JV = 2(VE)$

$3x - 6 = 2(2x - 7)$

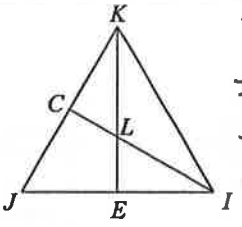
$3x - 6 = 4x - 14$

$\boxed{8 = x}$

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



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



$KL = 2(LE)$

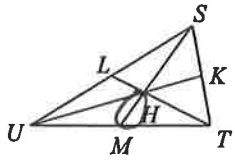
$7x + 1 = 2(2x + 5)$

$7x + 1 = 4x + 10$

$3x = 9$

$\boxed{x = 3}$

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



$HM = \frac{1}{3}(SM)$

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

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

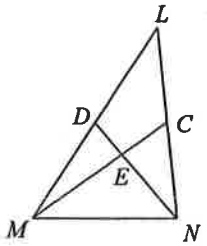
$6x - 6 = 2x + 2$

$4x = 8$

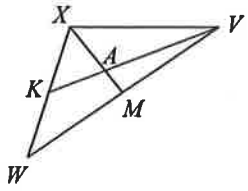
~~$x = 4$~~

$\boxed{x = 2}$

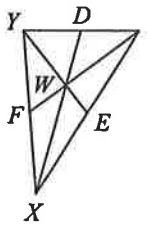
16) Find x if $NE = x + 4$ and $ND = 2x$



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



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



$ZW = 2(WF)$

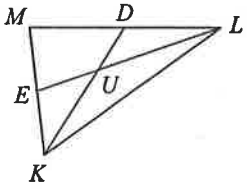
$-6 + 2x = 2(2x - 9)$

$-6 + 2x = 4x - 18$

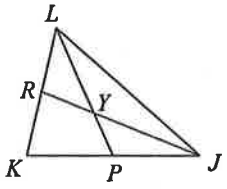
$12 = 2x$

$6 = x$

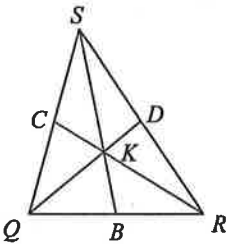
19) Find x if $KD = x$ and $UD = -8 + x$



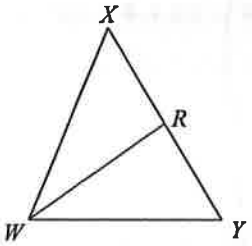
20) Find x if $LY = 4x$ and $LP = 5x + 1$



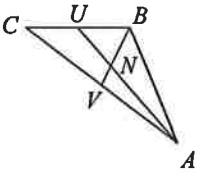
21) Find CS if $CQ = \frac{2x - 9}{2}$ and $CS = \frac{1 + x}{2}$



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



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



$AN = 2(NU)$

$x + 4 = 2\left(\frac{2x - 1}{2}\right)$

$x + 4 = 2x - 1$

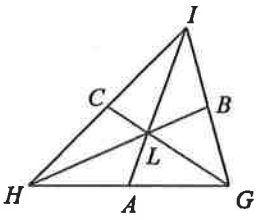
$5 = x$

$AN = x + 4$

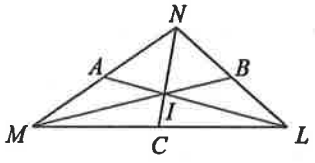
$AN = 5 + 4$

$AN = 9$

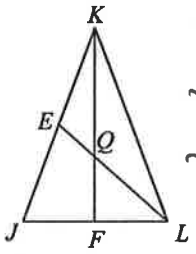
24) Find HL if $HL = 3x + 1$ and $HB = 7x - 1$



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

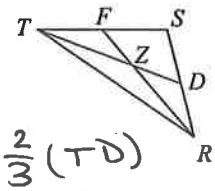


26) Find LQ if $LQ = x - 6$ and $QE = x - 8$



$LQ = 2(QE)$
$x - 6 = 2(x - 8)$
$x - 6 = 2x - 16$
$10 = x$
$LQ = x - 6$
$LQ = 10 - 6$
$\boxed{LQ = 4}$

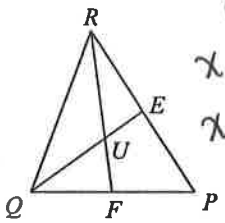
27) Find ZD if $TZ = 2x - 6$ and $TD = x + 9$



~~$TZ = 2(ZD)$~~

$TZ = \frac{2}{3}(TD)$
$2x - 6 = \frac{2}{3}(x + 9)$
$3(2x - 6) = 2(x + 9)$
$6x - 18 = 2x + 18$

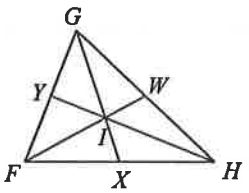
28) Find QE if $QU = x - 4$ and $UE = x - 8$



$QU = 2(UE)$
$x - 4 = 2(x - 8)$
$x - 4 = 2x - 16$
$12 = x$
$\boxed{QE = 12}$

$QE = QU + UE$
$QE = x - 4 + x - 8$
$QE = 12 - 4 + 12 - 8$

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



$6x - 18 = 2x + 18$
$4x = 36$
$x = 9$

$ZD = \frac{1}{3}(TD)$
$ZD = \frac{1}{3}(x + 9)$
$ZD = \frac{1}{3}(9 + 9)$
$\boxed{ZD = 6}$

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