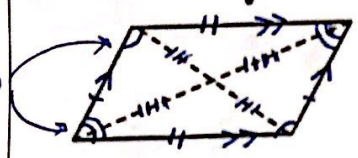


Main Ideas/Questions

Notes

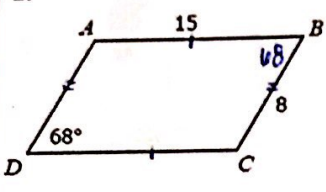
PROPERTIES OF Parallelograms



1. opposite sides are parallel
2. opposite sides are congruent
3. opposite angles are congruent
4. consecutive (ss±) angles are supplementary
5. diagonals bisect each other

Directions: Each quadrilateral below is a parallelogram. Find the missing measures.

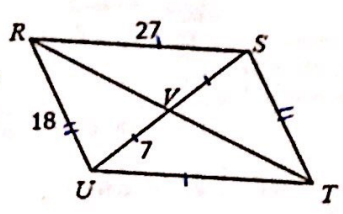
1.



$180 - 68 = 112$

$AD = \underline{8}$
 $DC = \underline{15}$
 $m\angle A = \underline{112^\circ}$
 $m\angle B = \underline{68^\circ}$
 $m\angle C = \underline{112^\circ}$

2.

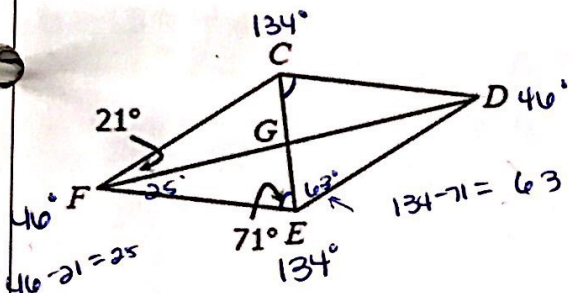


*RT = 30

$UT = \underline{27}$
 $ST = \underline{18}$
 $VS = \underline{7}$
 $VT = \underline{15}$

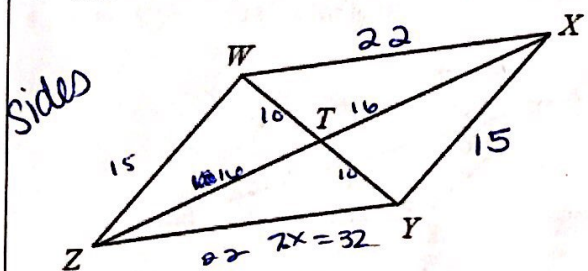
3. Given $m\angle FED = 134^\circ$

$\angle E \text{ and } \angle D = 180$
 $180 - 134 = 46$

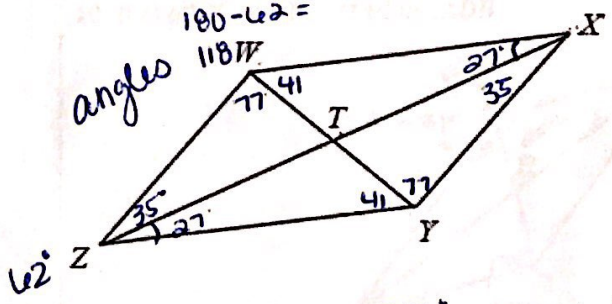


$m\angle DEC = \underline{63^\circ}$
 $m\angle CDE = \underline{46^\circ}$
 $m\angle ECD = \underline{71^\circ}$
 $m\angle DFE = \underline{25^\circ}$

4. Given $XY = 15, WX = 22, ZX = 32, WT = 10, m\angle WZY = 62^\circ, m\angle WXT = 27^\circ,$ and $m\angle ZWT = 77^\circ$

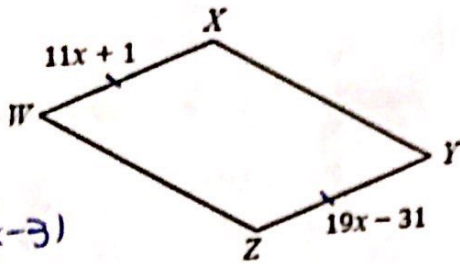


$ZW = \underline{15}$
 $ZY = \underline{22}$
 $TX = \underline{16}$
 $WY = \underline{20}$



$m\angle TZY = \underline{27^\circ}$ alt int to given 27
 $m\angle XYZ = \underline{118}$ cons. \angle supp
 $m\angle XWT = \underline{41^\circ}$ angle addition
 $m\angle XYT = \underline{77}$ alt int to given 77

5. Find YZ.

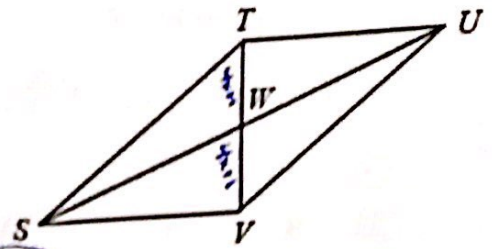


$$\begin{aligned} 11x + 1 &= 19x - 31 \\ -11x & \quad -11x \\ \hline 1 &= 8x - 31 \\ +31 & \quad +31 \end{aligned}$$

$$\begin{aligned} 32 &= 8x \\ \frac{32}{8} &= \frac{8x}{8} \\ 4 &= x \end{aligned}$$

$$\begin{aligned} YZ &= 19(4) - 31 \\ &= 76 - 31 \\ &= 45 \end{aligned}$$

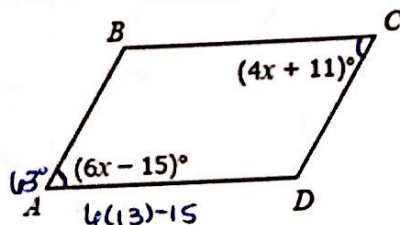
6. If $TV = 74$ and $WV = 4x + 1$, solve for x .



$$\begin{aligned} 74 &= 2(4x + 1) \\ 74 &= 8x + 2 \\ -2 & \quad -2 \\ \hline 72 &= 8x \\ \frac{72}{8} &= \frac{8x}{8} \end{aligned}$$

$$9 = x$$

7. Find $m\angle B$.

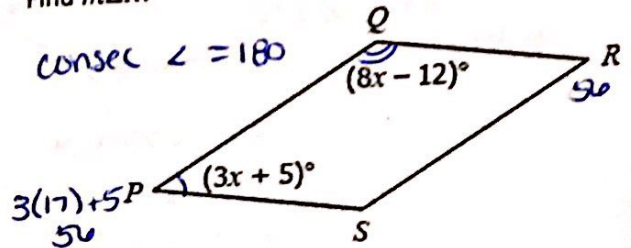


$$\begin{aligned} 6x - 15 &= 4x + 11 \\ -4x & \quad -4x \\ \hline 2x - 15 &= 11 \\ +15 & \quad +15 \end{aligned}$$

$$\begin{aligned} 2x &= 26 \\ \frac{2x}{2} &= \frac{26}{2} \\ x &= 13 \end{aligned}$$

$$\begin{aligned} \angle A, \angle B \text{ consec} &= 180 \\ 180 - 63 &= 117^\circ \end{aligned}$$

8. Find $m\angle R$.



$$\text{consec } \angle = 180$$

$$8x - 12 + 3x + 5 = 180$$

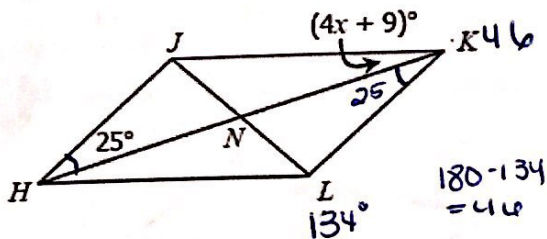
$$11x - 7 = 180$$

$$\frac{11x}{11} = \frac{187}{11}$$

$$x = 17$$

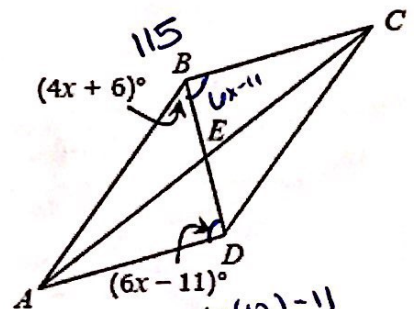
$$m\angle R = 56^\circ$$

9. If $m\angle KHL = 134^\circ$, solve for x .



$$\begin{aligned} 4x + 9 + 25 &= 46 \\ 4x + 34 &= 46 \\ 4x &= 12 \\ x &= 3 \end{aligned}$$

10. If $m\angle ABC = 115^\circ$, find $m\angle ADB$.



$$\begin{aligned} 6x - 11 + 4x + 6 &= 115 \\ 10x - 5 &= 115 \\ 10x &= 120 \\ x &= 12 \end{aligned}$$

$$6(12) - 11 = 61$$