

Day 2: Segment Relationships Practice

Find the measure of the stated segment.

1. Find MP. $MP = 23$

2. Find RT. $RT = 44$

3. Find XY. $XY = 23$

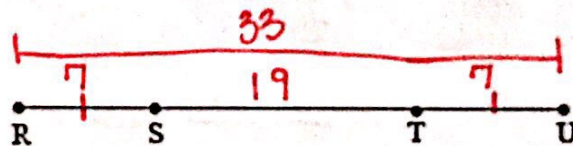
4. Find BC. $BC = 15$

5. Find EG if EF = 13 cm. $EG = 26$

6. Find BC if AC = 19 cm. $BC = 9.5$

7. If $RS = TU$, $ST = 19$, $RU = 33$

a) Find $RS = 7$



b) Find $SU = 26$

$$\frac{33}{14} - \frac{19}{14} = \frac{14}{14} = 7$$

8. In the diagram, points V, W, X, Y, and Z are collinear. $VZ = 52$, $XZ = 20$, and $WX = XY = YZ$. Find the indicated lengths.

a. $WX = 10$

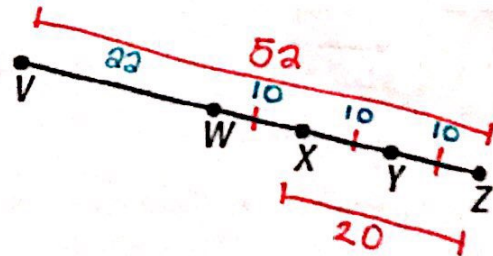
d. $VW = 22$

b. $VX = 32$

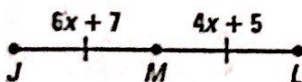
e. $WZ = 30$

c. $WY = 20$

f. $VY = 42$



9. M is the midpoint of JL. Find JM.

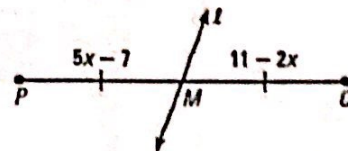


$$\begin{aligned} 6x + 7 &= 4x + 5 \\ -4x &\quad -4x \\ \hline 2x + 7 &= 5 \\ -7 &\quad -7 \\ \hline 2x &= -2 \\ \frac{2x}{2} &= \frac{-2}{2} \\ x &= -1 \end{aligned}$$

$$\begin{aligned} JM &= 6x + 7 \\ &= 6(-1) + 7 \\ &= -6 + 7 \\ &= 1 \end{aligned}$$

$JM = 1$

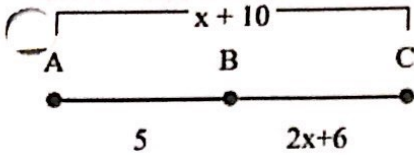
10. Line l is the segment bisector of \overline{PQ} . Solve for x.



$$\begin{aligned} 5x - 7 &= 11 - 2x \\ +2x &\quad +2x \\ \hline 7x - 7 &= 11 \\ +7 &\quad +7 \\ \hline 7x &= 18 \\ \frac{7x}{7} &= \frac{18}{7} \\ x &= 2.57 \end{aligned}$$

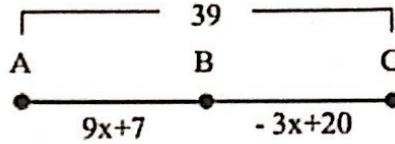
$x = 2.57$

11. Solve for x. Then determine the length of AC.



$$\begin{aligned}
 AB + BC &= AC \\
 5 + 2x + 6 &= x + 10 \\
 2x + 11 &= x + 10 \\
 \underline{-x \quad -x} & \\
 x + 11 &= 10 \\
 \underline{-11 \quad -11} & \\
 \boxed{x = -1} & \\
 AC &= x + 10 \\
 &= -1 + 10 \\
 \boxed{AC = 9} &
 \end{aligned}$$

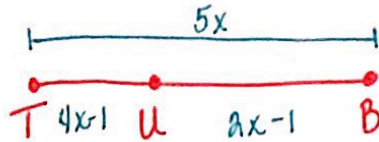
12. How long is BC?



$$\begin{aligned}
 AB + BC &= AC \\
 9x + 7 + 3x + 20 &= 39 \\
 6x + 27 &= 39 \\
 \underline{-27 \quad -27} & \\
 6x &= 12 \\
 \underline{\div 6 \quad \div 6} & \\
 x &= 2 \\
 BC &= -3x + 20 \\
 &= -3(2) + 20 \\
 \boxed{BC = 14} &
 \end{aligned}$$

13. If U is between T and B, $TU = 4x - 1$, $UB = 2x - 1$, and $TB = 5x$, determine:

- a. $x = \underline{2}$
- b. $TU = \underline{7}$
- c. $UB = \underline{3}$
- d. $TB = \underline{10}$



$$\begin{aligned}
 TU + UB &= TB \\
 4x - 1 + 2x - 1 &= 5x \\
 6x - 2 &= 5x \\
 \underline{-6x \quad -6x} & \\
 -2 &= -x \\
 \underline{-1 \quad -1} & \\
 2 &= x
 \end{aligned}$$

$$\begin{aligned}
 TU &= 4x - 1 \\
 &= 4(2) - 1 \\
 &= 7
 \end{aligned}$$

$$\begin{aligned}
 UB &= 2x - 1 \\
 &= 2(2) - 1 \\
 &= 3
 \end{aligned}$$

$$\begin{aligned}
 TB &= 5x \\
 &= 5(2) \\
 &= 10
 \end{aligned}$$