

Many Terms

$$\begin{aligned}
 &\underline{-3} + \underline{7x} - \underline{1} - \underline{5} + \underline{2x} = \underline{4x} - \underline{7} - \underline{10} - \underline{3x} - \underline{8} \\
 &7x + 2x - 3 - 1 - 5 = 4x - 3x - 7 - 10 - 8 \\
 &\quad \underline{9x - 9} \qquad \qquad = \underline{1x - 25} \\
 &\quad \underline{-1x} \qquad \qquad \qquad \underline{-1x} \\
 &\quad \underline{8x - 9} \qquad \qquad = \underline{-25} \\
 &\quad \quad \underline{+9} \qquad \qquad \quad \underline{+9} \\
 &\quad \quad \underline{\cancel{8x} - \cancel{8}} = \underline{-16} \\
 &\quad \quad \quad \quad \quad \quad \quad \quad \underline{8}
 \end{aligned}$$

→ x = -2

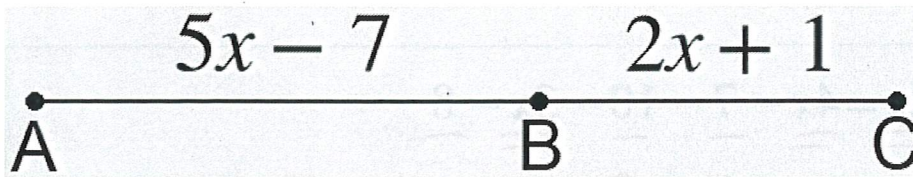
Distributing

$$\begin{aligned}
 &2 + 8(1 - x) + 6x = 13(x + 1) - 22 \\
 &\underline{2} - \underline{8} + \underline{8x} + \underline{6x} = \underline{13x} + \underline{13} - \underline{22} \\
 &8x + 6x + 2 - 8 = 13x + 13 - 22 \\
 &\quad \underline{14x - 6} \qquad \qquad = \underline{13x - 9} \\
 &\quad \underline{-13x} \qquad \qquad \quad \underline{-13x} \\
 &\quad \underline{x - 6} \qquad \qquad = \underline{-9} \\
 &\quad \quad \underline{+6} \qquad \quad \quad \underline{+6} \\
 &\quad \quad \underline{x - 6 + 6} = \underline{-9 + 6} \\
 &\quad \quad \quad \quad \quad \quad \quad \quad \underline{x - 0} = \underline{-3}
 \end{aligned}$$

x = -3

Segment Lengths

If $AC = 29$, determine the value of x , and then determine AB and BC .



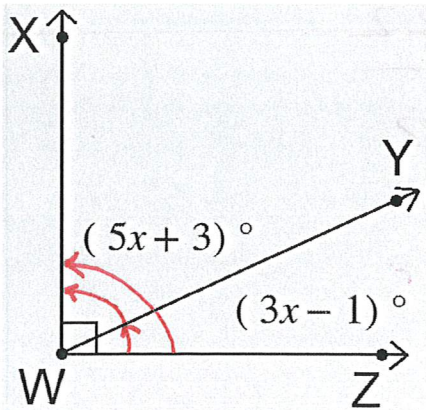
$$\begin{aligned}
 AB + BC &= AC \\
 (5x - 7) + (2x + 1) &= 29 \\
 5x + 2x - 7 + 1 &= 29 \\
 7x - 6 &= 29 \\
 \quad + 6 \quad &\quad + 6 \\
 \hline
 7x &= 35 \\
 \quad \div 7 \quad &\quad \div 7 \\
 \boxed{x = 5}
 \end{aligned}$$

$$\begin{aligned}
 AB \\
 5x - 7 \\
 5(5) - 7 \\
 25 - 7 \\
 \boxed{18}
 \end{aligned}$$

$$\begin{aligned}
 BC \\
 2x + 1 \\
 2(5) + 1 \\
 10 + 1 \\
 \boxed{11}
 \end{aligned}$$

Angle Measures

Determine the value of x , and then determine $\angle ZWY$ and $\angle YWX$.



$$\begin{aligned}
 \angle ZWY + \angle YWX &= \angle ZWX \\
 (3x - 1) + (5x + 3) &= 90 \\
 3x + 5x - 1 + 3 &= 90 \\
 8x + 2 &= 90 \\
 \quad - 2 \quad &\quad - 2 \\
 \hline
 8x &= 88 \\
 \quad \div 8 \quad &\quad \div 8 \\
 \boxed{x = 11}
 \end{aligned}$$

$$\begin{aligned}
 \angle ZWY \\
 3x - 1 \\
 3(11) - 1 \\
 33 - 1 \\
 \boxed{32}
 \end{aligned}$$

$$\begin{aligned}
 \angle YWX \\
 5x + 3 \\
 5(11) + 3 \\
 55 + 3 \\
 \boxed{58}
 \end{aligned}$$