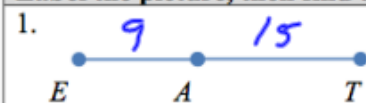


1.4 Practice Solutions

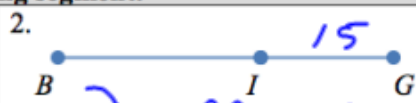
Label the picture, then find the missing segment.



EA = 15
AT = 9
Find ET

$$9 + 15$$

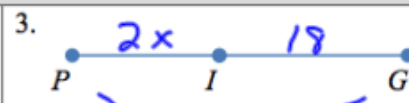
$$ET = 24$$



IG = 15
BG = 40
Find BI

$$40 - 15$$

$$BI = 25$$



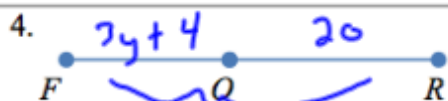
PI = 2x
IG = 18
PG = 34
Find PI

$$2x + 18 = 34$$

$$\begin{array}{r} 2x + 18 = 34 \\ -18 \quad -18 \\ \hline 2x = 16 \\ \hline x = 8 \end{array}$$

PI = 2x
2(8)

$$PI = 16$$



FO = 3y + 4
OR = 20
FR = 5y + 18
Find y

$$3y + 4 + 20 = 5y + 18$$

$$\begin{array}{r} 3y + 24 = 5y + 18 \\ -3y \quad -3y \\ \hline 24 = 2y + 18 \\ -18 \quad -18 \\ \hline 6 = 2y \\ \hline 3 = y \end{array}$$

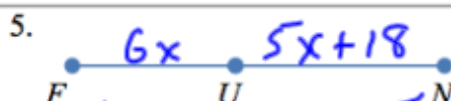
Find FO

$$FO = 3y + 4$$

$$FO = 3(3) + 4$$

$$FO = 9 + 4$$

$$FO = 13$$



FU = 6x
UN = 5x + 18
FN = 15x - 2
Find x

$$6x + 5x + 18 = 15x - 2$$

$$\begin{array}{r} 11x + 18 = 15x - 2 \\ -11x \quad -11x \\ \hline 18 = 4x - 2 \\ +2 \quad +2 \\ \hline 20 = 4x \\ \hline 5 = x \end{array}$$

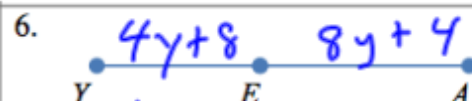
Find FN

$$FN = 15x - 2$$

$$FN = 15(5) - 2$$

$$FN = 75 - 2$$

$$FN = 73$$



EA = 8y + 4
YE = 4y + 8
YA = 15y - 9
Find y

$$4y + 8 + 8y + 4 = 15y - 9$$

$$\begin{array}{r} 12y + 12 = 15y - 9 \\ -12y \quad -12y \\ \hline 12 = 3y - 9 \\ +9 \quad +9 \\ \hline 21 = 3y \\ \hline 7 = y \end{array}$$

Find EA

$$EA = 8y + 4$$

$$EA = 8(7) + 4$$

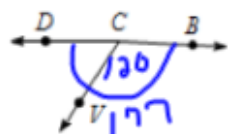
$$EA = 56 + 4$$

$$EA = 60$$

Use Angle Addition Postulate to answer the following.

7.

$m\angle BCV = 120^\circ$ and $m\angle BCD = 177^\circ$.
Find $m\angle VCD$.



$$\begin{array}{r} 177 \\ -120 \\ \hline 57 \\ m\angle VCD = 57^\circ \end{array}$$

8.

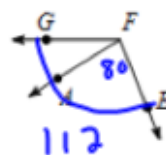
Find $m\angle IJS$ if $m\angle IJK = 153^\circ$
and $m\angle SJK = 125^\circ$.



$$\begin{array}{r} 153 \\ -125 \\ \hline 28 \\ m\angle IJS = 28^\circ \end{array}$$

9.

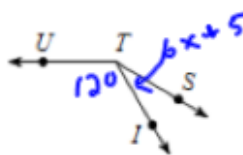
$m\angle EFG = 112^\circ$ and $m\angle EFA = 80^\circ$.
Find $m\angle AFG$.



$$\begin{array}{r} 112 \\ -80 \\ \hline 32 \\ m\angle AFG = 32^\circ \end{array}$$

10.

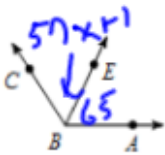
$m\angle ITU = 120^\circ$, $m\angle STI = 6x + 5$,
and $m\angle STU = 36x + 5$. Find x .



$$\begin{array}{r} 120 + 6x + 5 = 36x + 5 \\ 6x + 125 = 36x + 5 \\ -6x \quad -6x \\ \hline 125 = 30x + 5 \\ -5 \quad -5 \\ \hline 120 = 30x \\ \frac{120}{30} = \frac{30x}{30} \\ 4 = x \end{array}$$

11.

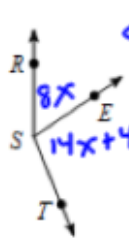
Find x if $m\angle CBE = 57x + 1$,
 $m\angle CBA = 124x - 1$, and $m\angle EBA = 65^\circ$.



$$\begin{array}{r} 57x + 1 + 65 = 124x - 1 \\ 57x + 66 = 124x - 1 \\ -57x \quad -57x \\ \hline 66 = 67x - 1 \\ +1 \quad +1 \\ \hline 67 = 67x \\ \frac{67}{67} = \frac{67x}{67} \\ 1 = x \end{array}$$

12.

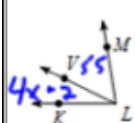
$m\angle RST = 158^\circ$, $m\angle RSE = 8x$,
and $m\angle EST = 14x + 4$. Find x .



$$\begin{array}{r} 8x + 14x + 4 = 158 \\ 22x + 4 = 158 \\ -4 \quad -4 \\ \hline 22x = 154 \\ \frac{22x}{22} = \frac{154}{22} \\ x = 7 \end{array}$$

13.

Find $m\angle KLV$ if $m\angle VLM = 55^\circ$,
 $m\angle KLV = 4x + 2$, and $m\angle KLM = 12x + 9$.

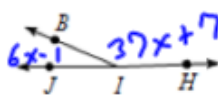


$$\begin{array}{r} 4x + 2 + 55 = 12x + 9 \\ 4x + 57 = 12x + 9 \\ -4x \quad -4x \\ \hline 57 = 8x + 9 \\ -9 \quad -9 \\ \hline 48 = 8x \\ \frac{48}{8} = \frac{8x}{8} \\ 6 = x \\ m\angle KLV = 4x + 2 \\ 4(6) + 2 \\ 24 + 2 \end{array}$$

$$m\angle KLV = 26$$

14.

Find $m\angle JIB$ if $m\angle BIH = 37x + 7$,
 $m\angle JIH = 178^\circ$, and $m\angle JIB = 6x - 1$.

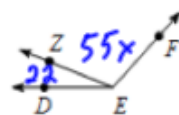


$$\begin{array}{r} 6x - 1 + 37x + 7 = 178 \\ 43x + 6 = 178 \\ -6 \quad -6 \\ \hline 43x = 172 \\ \frac{43x}{43} = \frac{172}{43} \\ x = 4 \\ m\angle JIB = 6x - 1 \\ 6(4) - 1 \\ 24 - 1 \end{array}$$

$$m\angle JIB = 23$$

15.

$m\angle DEF = 66x$, $m\angle DEZ = 22^\circ$,
and $m\angle ZEF = 55x$. Find $m\angle ZEF$.



$$\begin{array}{r} 22 + 55x = 66x \\ -55x \quad -55x \\ \hline 22 = 11x \\ \frac{22}{11} = \frac{11x}{11} \\ 2 = x \\ m\angle ZEF = 55x \\ 55(2) \end{array}$$

$$m\angle ZEF = 110$$