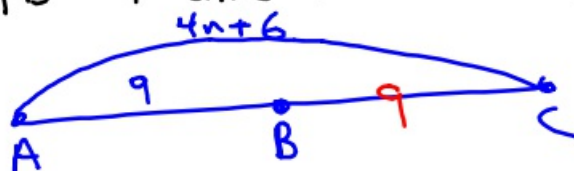


8-30-17 5th Geo

1-4.5 Hw

- ⑧ B is midpoint of \overline{AC} with
 $AB = 9$ and $AC = 4n + 6$



$$\begin{array}{r} 4n + 6 = 18 \\ -6 \quad -6 \\ \hline 4n = 12 \\ n = 3 \end{array}$$

- ⑭ N is midpoint of \overline{AD} with
 $AD = 8n - 10$ and $AN = 3n - 1$



$$AN + ND = AD$$

$$3n - 1 + 3n - 1 = 8n - 10$$

$$\begin{array}{r} 6n - 2 = 8n - 10 \\ -6n \quad -6n \end{array}$$

$$\begin{array}{r} -2 = 2n - 10 \\ +10 \quad +10 \end{array}$$

$$\frac{8}{2} = \frac{2n}{2}$$

$$4 = n$$

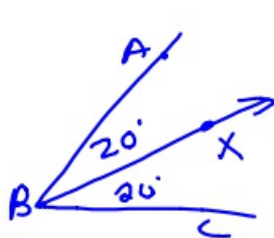
- ① $\angle A$ and $\angle B$ are supplementary angles. If $\angle A = 70^\circ$, what is $\angle B$?

$$\angle A + \angle B = 180^\circ$$

$$70^\circ + \angle B = 180^\circ$$

$$\angle B = 110^\circ$$

- ② \overrightarrow{BX} bisects $\angle ABC$. If $\angle ABX = 20^\circ$, what is $\angle CBX$?



20°

- ③ $\angle A$ and $\angle B$ are a linear pair. If $\angle A = 8n + 10$ and $\angle B = 2n + 40$, what is $m\angle B$?

$$\angle A + \angle B = 180^\circ$$

$$\downarrow \quad \downarrow$$

$$8n + 10 + 2n + 40 = 180^\circ$$

$$10n + 50 = 180^\circ$$

$$\underline{-50 \quad -50}$$

$$\frac{10n}{10} = \frac{130}{10}$$

$$n = 13$$

$$\angle B = 2n + 40$$

$$= 2 \cdot 13 + 40$$

$$= 66^\circ$$

- ④ $\angle A$ and $\angle B$ are vertical angles. If $\angle A = 8n + 20$ and $\angle B = 6n + 30$, what is $\angle A$?

$$\begin{aligned}\angle A &= \angle B \\ 8n + 20 &= 6n + 30 \\ -6n &\quad -6n \\ \hline 2n + 20 &= 30 \\ -20 &\quad -20 \\ \hline 2n &= 10 \\ n &= 5\end{aligned}$$

$$\begin{aligned}\angle A &= 8n + 20 \\ &= 8 \cdot 5 + 20 \\ &= 60^\circ\end{aligned}$$

- ⑤ $\angle A$ and $\angle B$ are complementary angles. If $\angle A = 6n + 10$ and $\angle B = 4n + 20$, what is $\angle A$?

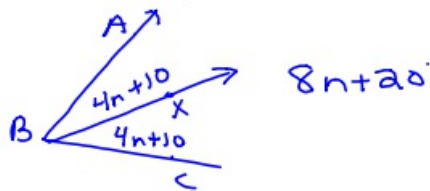
$$\begin{aligned}\angle A + \angle B &= 90^\circ \\ 6n + 10 + 4n + 20 &= 90^\circ \\ 10n + 30 &= 90^\circ \\ -30 &\quad -30 \\ \hline 10n &= 60 \\ n &= 6\end{aligned}$$

$$\begin{aligned}\angle A &= 6n + 10 \\ &= 6 \cdot 6 + 10 \\ &= 46^\circ\end{aligned}$$

- ⑥ $\angle A$ and $\angle B$ are a linear pair. $\angle A = 5n - 10$. Give an expression for what $\angle B$ must be?

$$\begin{aligned} \angle A + \angle B &= 180^\circ \\ \downarrow \\ (5n - 10) + \angle B &= 180^\circ - 5n + 10 \\ \angle B &= 190 - 5n \end{aligned}$$

- ⑦ \overrightarrow{BX} bisects $\angle ABC$.
If $\angle ABX = 4n + 10$, what is expression for $\angle ABC$?



- ⑧ $\angle A$ and $\angle B$ are vertical angles. $\angle A = 8n + 1$ and $\angle B = 12n - 41$. What is $\angle A$?

$$\begin{aligned} \angle A &= \angle B \\ 8n + 1 &= 12n - 41 \\ -8n &\quad -8n \\ \hline 1 &= 4n - 41 \\ +41 &\quad +41 \\ \hline 42 &= 4n \\ \frac{42}{4} &= \frac{4n}{4} \\ 10\frac{1}{2} &= n \end{aligned}$$

$$\begin{aligned} \angle A &= 8n + 1 \\ &= 8 \cdot 10\frac{1}{2} + 1 \\ &= 84 + 1 \\ &= 85^\circ \end{aligned}$$

⑨ $\angle A$ and $\angle B$ are supplementary angles. If $\angle B = 6n - 100$, what is $\angle A$?

$$\angle A + \angle B = 180^\circ$$

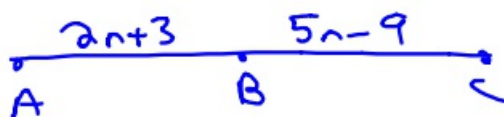
$$\angle A + \begin{matrix} \textcircled{6n} & \textcircled{-100} \\ -6n & +100 \end{matrix} = 180^\circ - 6n + 100$$

$$\angle A = 280 - 6n$$

8-30-17 6th Geo

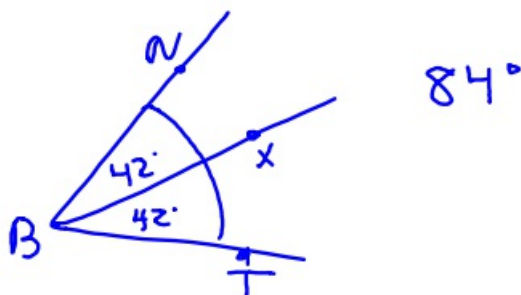
1-4.5 HW

- ⑬ On \overline{AC} , B is the midpoint
with $AB = 2n + 3$ and $BC = 5n - 9$.



$$\begin{array}{r} 2n+3 = 5n-9 \\ -2n \quad -2n \\ \hline 3 = 3n-9 \\ +9 \quad +9 \\ \hline 12 = 3n \\ n = 4 \end{array}$$

- ① \overrightarrow{BX} bisects $\angle NBT$. If $\angle NBX = 42^\circ$, what is $\angle NBT$?



- ② $\angle A$ and $\angle B$ are supplementary angles. If $\angle A = 50^\circ$, what is $\angle B$?

$$\begin{array}{l} \angle A + \angle B = 180^\circ \\ 50^\circ + \textcircled{130^\circ} \end{array}$$

- ③ $\angle A$ and $\angle B$ are a linear pair. If $\angle A = 8n + 6$ and $\angle B = 2n + 44$, what is $m\angle B$?



$$\angle A + \angle B = 180^\circ$$

$$\downarrow \quad \downarrow$$

$$8n + 6 + 2n + 44 = 180^\circ$$

$$10n + 50 = 180^\circ$$

$$\underline{-50 \quad -50}$$

$$10n = 130$$

$$n = 13$$

$$\begin{aligned}\angle B &= 2n + 44 \\ &= 2 \cdot 13 + 44 \\ &= 26 + 44 \\ &= 70^\circ\end{aligned}$$

- ④ $\angle ABC$ and $\angle NBT$ are vertical angles. If $\angle ABC = 6n + 10$ and $\angle NBT = 4n + 30$, what is $\angle ABC$?

$$\angle ABC = \angle NBT$$

$$6n + 10 = 4n + 30$$

$$\underline{-4n \quad -4n}$$

$$2n + 10 = 30$$

$$\underline{-10 \quad -10}$$

$$2n = 20$$

$$n = 10$$

$$\begin{aligned}\angle ABC &= 6n + 10 \\ &= 6 \cdot 10 + 10 \\ &= 70^\circ\end{aligned}$$

- ⑤ $\angle A$ and $\angle B$ are complementary angles. If $\angle A = n + 18$ and $\angle B = 9n + 2$, what is $\angle A$?

$$\angle A + \angle B = 90^\circ$$

$$n + 18 + 9n + 2 = 90^\circ$$

$$10n + 20 = 90^\circ$$

$$\begin{array}{r} -20 \quad -20 \\ \hline 10n = 70 \\ \frac{10n}{10} = \frac{70}{10} \\ n = 7 \end{array}$$

$$\begin{aligned} \angle A &= n + 18 \\ &= 7 + 18 \\ &= 25^\circ \end{aligned}$$

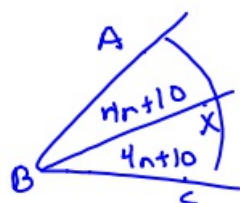
- ⑥ $\angle A$ and $\angle B$ are supplementary angles. If $\angle A = 6n - 10$, what expression represents $\angle B$?

$$\angle A + \angle B = 180^\circ$$

$$\begin{array}{c} \downarrow \\ (6n - 10) + \angle B = 180^\circ - 6n + 10 \\ \begin{array}{c} -6n \quad +10 \end{array} \end{array}$$

$$\angle B = 190 - 6n$$

- ⑦ \vec{BX} bisects $\angle ABC$. If $\angle ABX = 4n + 10$, what expression represents $\angle ABC$?



$$8n + 20$$

8 $\angle A$ and $\angle B$ are a linear pair with $\angle A = 2n$ and $\angle B = 18n - 20$. What is $\angle A$?

$$\angle A + \angle B = 180^\circ$$

$$2n + 18n - 20 = 180^\circ$$

$$20n - 20 = 180^\circ$$

$$+20 \quad +20$$

$$20n = 200$$

$$n = 10^\circ$$

$$\angle A = 2n$$

$$= 2 \cdot 10$$

$$= 20^\circ$$