

9-12-13

1<sup>st</sup> Geo

If I say	You write
$\angle A$ and $\angle B$ are vertical angles	$\angle A = \angle B$
$\angle A$ and $\angle B$ are complementary $\angle$ 's	$\angle A + \angle B = 90^\circ$
$\angle A$ and $\angle B$ are supplementary $\angle$ 's	$\angle A + \angle B = 180^\circ$
$\angle A$ and $\angle B$ are a linear pair	$\angle A + \angle B = 180^\circ$

Linear pair



- ①  $\angle A$  and  $\angle B$  are vertical  $\angle$ 's.  
If  $\angle A = 4n + 6$  and  $\angle B = 2n + 10$   
What is  $m\angle A$ ?

$$\begin{aligned} \angle A &= \angle B \\ \downarrow \quad \downarrow \\ 4n + 6 &= 2n + 10 \\ \underline{-2n \quad -2n} & \\ 2n + 6 &= 10 \\ \underline{-6 \quad -6} & \\ 2n &= 4 \\ \underline{\quad 2} & \quad \underline{\quad 2} \\ n &= 2 \end{aligned}$$

$$n = 2$$

$$\begin{aligned} \angle A &= 4n + 6 \\ &= 4 \cdot 2 + 6 \\ &= 8 + 6 \\ &= 14^\circ \end{aligned}$$

- ②  $\angle A$  and  $\angle B$  are complementary angles. If  $\angle A = 8n + 2$  and  $\angle B = 2n + 18$ , what is  $m\angle A$ ?

$$\begin{aligned} \angle A + \angle B &= 90^\circ \\ \downarrow \quad \downarrow \\ 8n + 2 + 2n + 18 &= 90^\circ \\ 10n + 20 &= 90^\circ \\ \underline{-20 \quad -20} & \\ 10n &= 70 \\ \underline{10} \quad \underline{10} & \\ n &= 7 \end{aligned}$$

$$\begin{aligned} \angle A &= 8n + 2 \\ &= 8 \cdot 7 + 2 \\ &= 56 + 2 \\ &= 58^\circ \end{aligned}$$

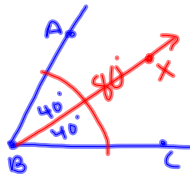
- ③  $\angle A$  and  $\angle B$  are a linear pair. If  $\angle A = 8n$  and  $\angle B = 2n - 20$ , what is  $m\angle A$ ?

$$\begin{aligned} \angle A + \angle B &= 180^\circ \\ \downarrow \quad \downarrow \\ 8n + 2n - 20 &= 180^\circ \\ 10n - 20 &= 180^\circ \\ \underline{+20 \quad +20} & \\ 10n &= 200 \\ \underline{10} \quad \underline{10} & \\ n &= 20 \end{aligned}$$

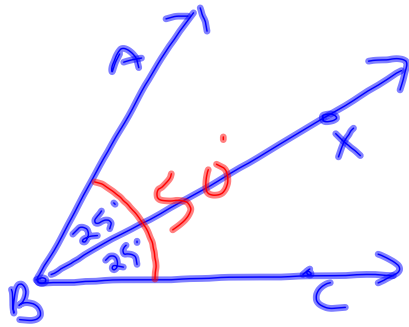
$$\begin{aligned} \angle A &= 8 \cdot n \\ &= 8 \cdot 20 \\ &= 160^\circ \end{aligned}$$

$\rightarrow$   $BX$  bisects  $\angle ABC$ .

If  $\angle ABX = 40^\circ$ , what is  $m\angle ABC$ ?  $80^\circ$



$\angle ABC$  is bisected by  $\overrightarrow{BX}$ .  
If  $\angle ABC = 50^\circ$ , what is  
 $m \angle ABX$ ?  $25^\circ$



$\angle ABC$  is bisected by  $\overrightarrow{BX}$ .  
If  $\angle ABC = 4n + 8$ , what is  
 $m \angle ABX$ ?  $2n + 4$

