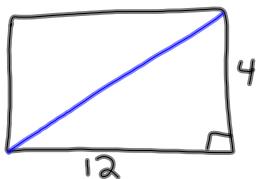


9-16-13  
5<sup>th</sup> Geo

Questions from Ch 1 Pt 2

(16)



$$\begin{aligned}a^2 + b^2 &= c^2 \\12^2 + 4^2 &= c^2 \\144 + 16 &= c^2 \\\sqrt{160} &= c \\12.6 &\approx c\end{aligned}$$

(3) midpoint  $(\underline{8}, \underline{7}) (\underline{1}, \underline{6})$

$$\text{midpoint} = \left( \frac{8+1}{2}, \frac{7+6}{2} \right)$$

$$(4\frac{1}{2}, 6\frac{1}{2})$$

$$\text{midpoint} = \left( \frac{x_1+x_2}{2}, \frac{y_1+y_2}{2} \right)$$

(2)



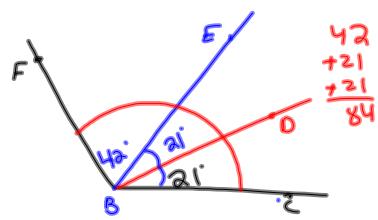
$$\begin{aligned}AD + DB &= AB \\AD + \cancel{3} - \cancel{3} &= 4n \\AD &= 4n - 3\end{aligned}$$

(17)  $A = (3, 5)$   $B = (5, 15)$

What is  $AB$ ?

$$\begin{aligned}D &= \sqrt{\Delta x^2 + \Delta y^2} \\&= \sqrt{2^2 + 10^2} \\&= \sqrt{4 + 100} \\&= \sqrt{104} \\&\approx 10.2\end{aligned}$$

② 1)  $\angle DBE = 21^\circ$   
 $\angle FBC = ?$  84



② 2)  $\angle EBD = 4n+16$   $\angle DBC = 8n+12$   
 $\angle EBC = 40^\circ$

Diagram showing angles at point B. Angle EBD is labeled  $4n+16$ . Angle DBC is labeled  $8n+12$ . Angle EBC is labeled  $40^\circ$ . The equation  $4n+16 + 8n+12 = 40$  is solved to find  $n=1$ .

$$\begin{aligned} 4n+16 + 8n+12 &= 40 \\ \hline 4n+16 &= 16 \\ \hline 4n &= 12 \\ \hline n &= 3 \end{aligned}$$

② 3)  $\angle FBC = 3n-24$   $\angle DBC = 2n+6$   $\angle EBC = 6n$

$\angle EBC = ?$  33

$$\begin{aligned} 3n-24 + 2n+6 + 6n &= 33 \\ \hline 11n-18 &= 33 \\ \hline 11n &= 51 \\ \hline n &= 30 \end{aligned}$$

② 4) C is between X and Y



$$\begin{aligned} XC + CY &= XY \\ \downarrow &\quad \downarrow \\ 6n-4 + 2n+1 &= XY \\ 8n - 3 &= XY \end{aligned}$$

⑦  $\angle A + \angle B = 90^\circ$   $\angle A = ?$

$$\begin{array}{c} \downarrow \\ n+6 + 8n-6 = 90^\circ \\ 9n = 90^\circ \\ n=10 \\ \therefore \angle A = 10+6 = 16 \end{array}$$

⑧ D is between A and B.

$$\begin{array}{c} AD + DB = AB \\ \downarrow \quad \downarrow \\ \cancel{\frac{n+6-d}{-2n+2}} + DB = \cancel{\frac{3n+8}{-2n+2}} \\ DB = n+10 \end{array}$$

⑩

$$\begin{array}{c} a^2 + b^2 = c^2 \\ 20^2 + 21^2 = c^2 \\ 400 + 441 = c^2 \\ \sqrt{841} = \sqrt{c^2} \\ c = 29 \end{array}$$

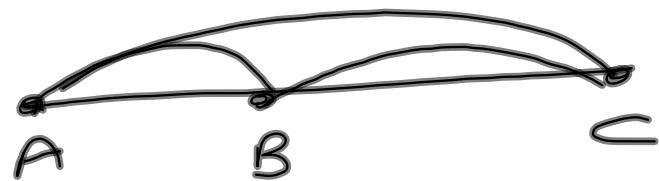
⑪

$$\begin{array}{c} a^2 + b^2 = c^2 \\ 8^2 + 14^2 = c^2 \\ 64 + 196 = c^2 \\ \sqrt{260} = \sqrt{c^2} \\ c \approx 16.1 \end{array}$$

⑬  $(-5, -1)$   $(-7, 7)$

$$\begin{array}{l} \text{midpoint} = \left( \frac{-5+(-7)}{2}, \frac{-1+(7)}{2} \right) \\ \left( \frac{-12}{2}, \frac{6}{2} \right) \\ (-6, 3) \end{array}$$

⑨ B is between A and C



$$AB + BC = AC$$



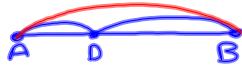
$$\begin{array}{r} AB + n+1 \\ \underline{-\quad n-1} \\ \hline 6n \end{array}$$

$$AB = 5n - 1$$

9-16-13  
Geo

Ch. 1 Pt 2 ?'s

- ② If D is between A and B with  $AB = 4n$  and  $BD = 3$ , what is  $AD$ ?

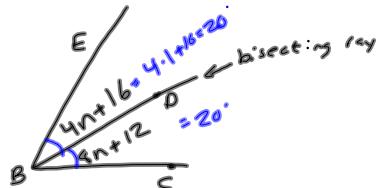


$$\begin{aligned} AD + DB &= AB \\ \downarrow &\quad \downarrow &\quad \downarrow \\ AD + 3 &= 4n \\ -3 &\quad -3 \\ \hline AD &= 4n - 3 \end{aligned}$$

- ③  $\angle EBD = 4n+16$

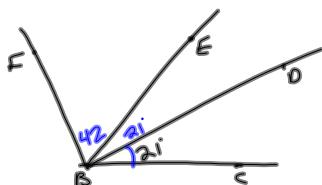
$$\angle DBC = 8n+12$$

numerical value of  $\angle EBC$  40°



$$\begin{aligned} 8n+12 &= 4n+16 \\ -4n &\quad -4n \\ \hline 4n+12 &= 16 \\ -12 &\quad -12 \\ \hline 4n &= 4 \\ n &= 1 \end{aligned}$$

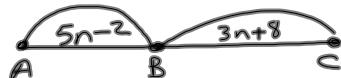
- ④  $\angle DBC = 21^\circ$   $\angle FBC = ?$  84



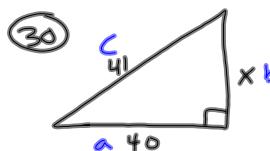
- ①  $A = (3, 5) (7, 6)$

$$\begin{aligned} D &= \sqrt{\Delta x^2 + \Delta y^2} \\ &= \sqrt{4^2 + 1^2} \\ &= \sqrt{16 + 1} \\ &= \sqrt{17} \\ &\approx 4.1 \end{aligned}$$

- ⑯ B is midpoint of  $\overline{AC}$  with  
 $AB = 5n-2$  and  $BC = 3n+8$ .  
 What is  $n$ ?



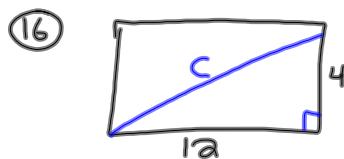
$$\begin{aligned} 5n-2 &= 3n+8 \\ -3n &\quad \cancel{-3n} \\ 2n-2 &= 8 \\ +2 &\quad +2 \\ 2n &= 10 \\ n &= 5 \end{aligned}$$



$$\begin{aligned} 40^2 + b^2 &= 41^2 \\ 1600 + b^2 &= 1681 \\ -1600 &\quad -1600 \\ b^2 &= 81 \\ b &= 9 \end{aligned}$$

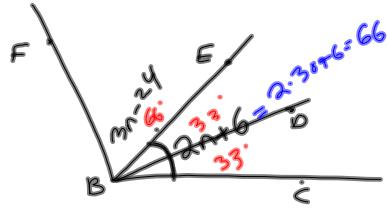
- ⑯  $A=(3,5)$     $B=(5,15)$   
 What is  $AB$ ?

$$\begin{aligned} D &= \sqrt{\Delta x^2 + \Delta y^2} \\ &= \sqrt{2^2 + 10^2} \\ &= \sqrt{4 + 100} \\ &= \sqrt{104} \\ &\approx 10.2 \end{aligned}$$



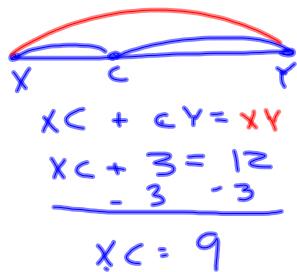
$$\begin{aligned} 12^2 + 4^2 &= c^2 \\ 144 + 16 &= c^2 \\ \sqrt{160} &= c \\ 12.6 &\approx c \end{aligned}$$

- ③  $\angle EBC = 2n+6$   
 $\angle FBE = 3n-24$   
 what is numerical value of  $\angle DBC$ ? 33



$$\begin{array}{r} 3n-24 = 2n+6 \\ -2n \quad -2n \\ \hline n-24 = 6 \\ +24 \quad +24 \\ \hline n = 30 \end{array}$$

- ④ C is between X and Y  
 with  $YC=3$  and  $XY=12$ ;  
 what is  $XC$ ?



- ⑤ If  $\angle A$  and  $\angle B$  are vertical angles with  $\angle A=5n-3$  and  $\angle B=3n+13$ , what is  $\angle A$ ?

$$\begin{array}{r} \angle A = \angle B \\ 5n-3 = 3n+13 \\ -3n \quad -3n \\ \hline 2n-3 = 13 \\ +3 \quad +3 \\ \hline \frac{2n}{2} = \frac{16}{2} \\ n = 8 \end{array}$$

$$\begin{aligned} \therefore \angle A &= 5n-3 \\ &= 5 \cdot 8 - 3 \\ &= 40 - 3 \\ &= 37 \end{aligned}$$