

8-30-18 5th Geo

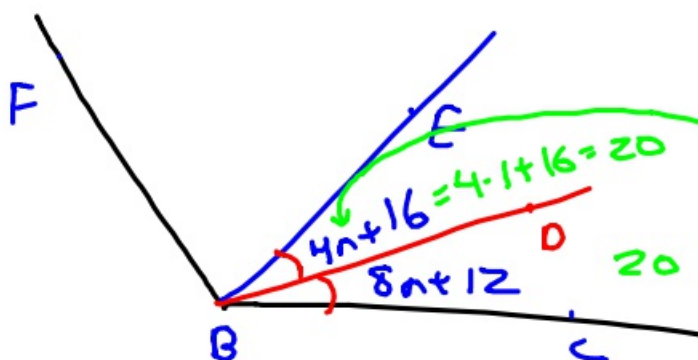
(13) $(-5, -1)$ $(-7, 7)$

$$\begin{aligned} \text{Midpoint} &= \left(\frac{-5 + (-7)}{2}, \frac{-1 + 7}{2} \right) \\ &= (-6, 3) \end{aligned}$$

(3) $(8, 7)$ $(1, 6)$

$$\begin{aligned} \text{Midpoint} &= \left(\frac{8 + 1}{2}, \frac{7 + 6}{2} \right) \\ &= (4.5, 6.5) \end{aligned}$$

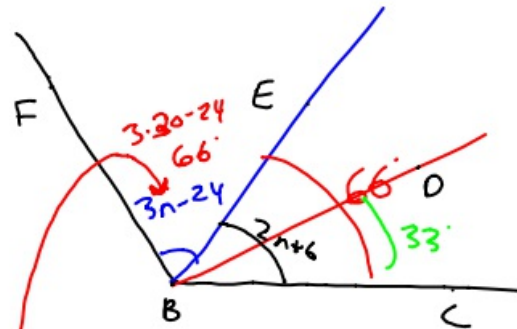
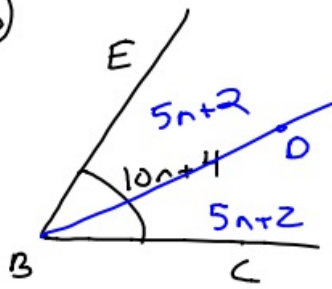
(22)



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

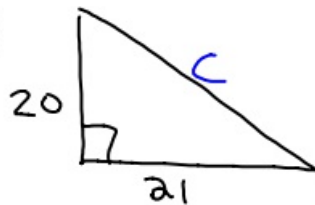
$\therefore \angle EBC = 40^\circ$

(23)



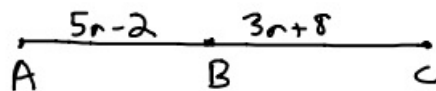
$$\begin{aligned} 3n-24 &= 2n+6 \\ -2n & \quad -2n \\ \hline n-24 &= 6 \\ +24 & +24 \\ \hline n &= 30 \end{aligned}$$

(20)



$$\begin{aligned} 20^2 + 21^2 &= c^2 \\ 400 + 441 &= c^2 \\ \sqrt{841} &= \sqrt{c^2} \\ 29 &= c \end{aligned}$$

(19)



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

⑨ $\angle A + \angle B = 90^\circ$

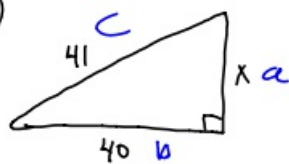
$\downarrow \quad \downarrow$
 $n+6 + 8n-6 = 90$
 $9n = 90$
 $n = 10$

$\angle A = n+6$
 $= 10+6$
 $= 16$

⑰ If $A = (3, 5)$ and $B = (5, 15)$,
 what is AB ?

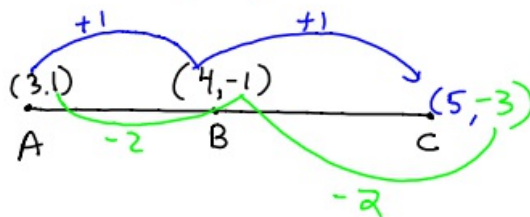
$$\begin{aligned}
 D &= \sqrt{\Delta x^2 + \Delta y^2} \\
 &= \sqrt{2^2 + 10^2} \\
 &= \sqrt{104} \\
 &\approx 10.2
 \end{aligned}$$

⑳



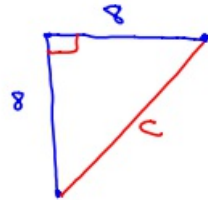
$$\begin{aligned}
 a^2 + b^2 &= c^2 \\
 x^2 + 40^2 &= 41^2 \\
 x^2 + 1600 &= 1681 \\
 \hline
 x^2 &= 81 \\
 x &= 9
 \end{aligned}$$

㉑



New practice

- ① If I run 8 miles due West and then 8 miles due South, how far from my starting point am I?



$$\begin{aligned}8^2 + 8^2 &= c^2 \\64 + 64 &= c^2 \\ \sqrt{128} &= \sqrt{c^2} \\ c &\approx 11.3\end{aligned}$$

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

$$\begin{aligned}\angle A + \angle B &= 180^\circ \\ \downarrow \quad \downarrow \\ 8n + 2 + 2n + 18 &= 180^\circ\end{aligned}$$

$$\begin{aligned}10n + 20 &= 180^\circ \\ -20 \quad -20 \\ \hline 10n &= 160\end{aligned}$$

$$n = 16$$

$$\begin{aligned}\angle B &= 2n + 18 \\ &= 2 \cdot 16 + 18 \\ &= 50^\circ\end{aligned}$$

- ③ \cong Congruent

- ④ \therefore therefore

- ⑤ $\begin{matrix} \cdot & \cdot & & \cdot \\ A & B & & C \\ & & & \cdot \\ & & & D \end{matrix}$

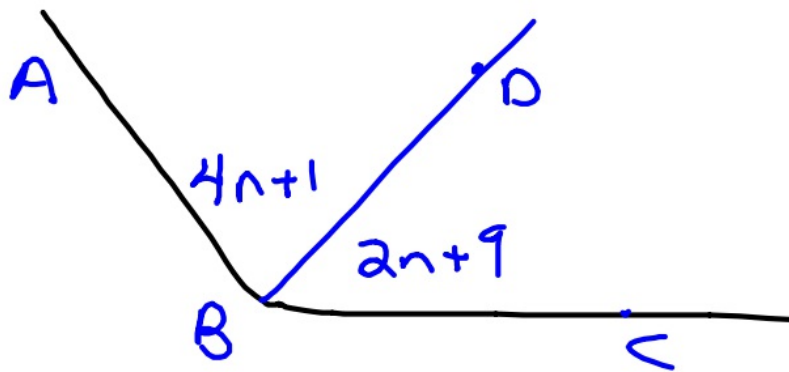
Which three points are collinear?

B, C, D

⑥ \vec{BD} bisects $\angle ABC$.

If $\angle ABD = 4n+1$ and

$\angle DBC = 2n+9$, what is the numerical value of $\angle DBC$?



$$\begin{array}{r} 4n+1 = 2n+9 \\ -2n \quad -2n \\ \hline \end{array}$$

$$\begin{array}{r} 2n+1 = 9 \\ -1 \quad -1 \\ \hline \end{array}$$

$$2n = 8$$

$$n = 4$$

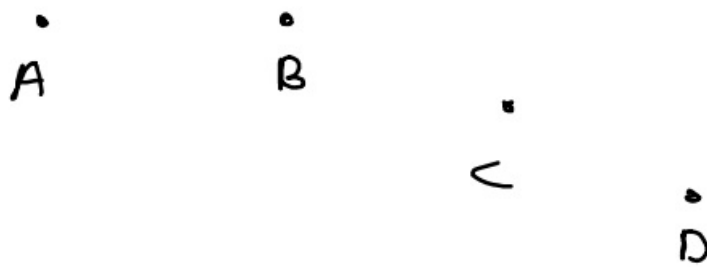
$$\begin{aligned} \angle DBC &= 2 \cdot n + 9 \\ &= 2 \cdot 4 + 9 \\ &= 8 + 9 \\ &= 17 \end{aligned}$$

8-30-18 6th Geo

① \cong Congruent

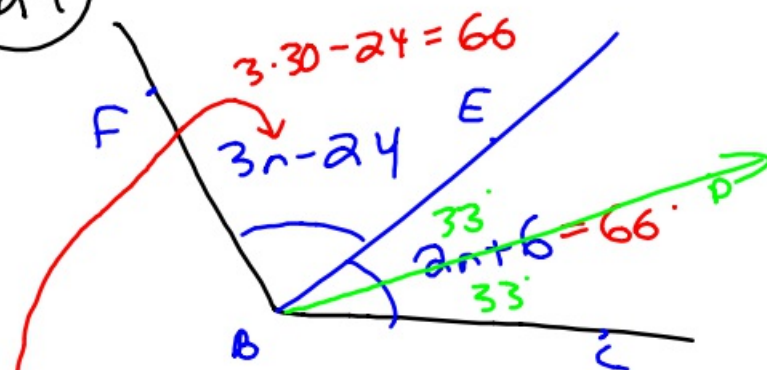
② \therefore therefore

③ Which three points are collinear? B, C, D



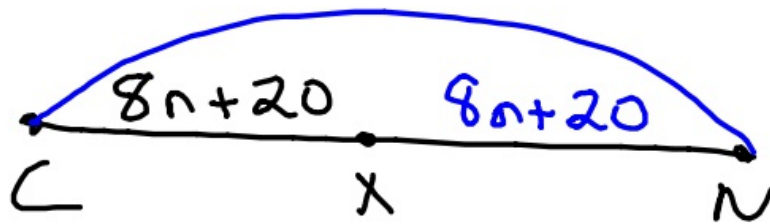
Questions from last night

24



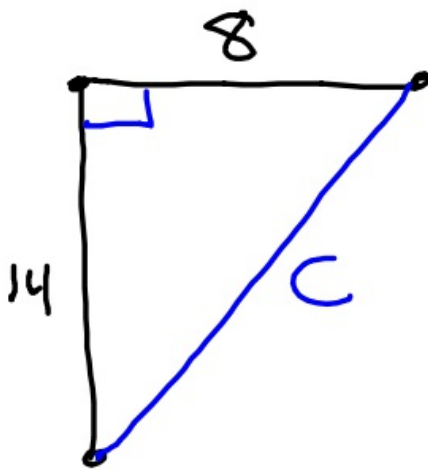
$$\begin{array}{r} 3n-24 = 2n+6 \\ -2n \quad -2n \\ \hline n-24 = 6 \\ +24 \quad +24 \\ \hline n = 30 \end{array}$$

(14)



$$16n + 40$$

(11)



$$8^2 + 14^2 = c^2$$

$$64 + 196 = c^2$$

$$\sqrt{260} = \sqrt{c^2}$$

$$c \approx 16.1$$

(7)

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

$$\begin{array}{c} \downarrow \qquad \qquad \downarrow \\ n+6 + 8n-6 = 90 \end{array}$$

$$9n = 90$$

$$n = 10$$

$$\angle A = 10 + 6$$

$$= 16$$

$$\textcircled{3} \quad (8,7) \quad (1,6)$$

$$\text{Midpoint} = \left(\frac{8+1}{2}, \frac{7+6}{2} \right)$$
$$(4.5, 6.5)$$

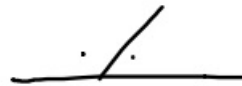


$$\textcircled{10} \quad \text{Distance from } (-4, -2) \text{ to } (-3, -1)$$

$$D = \sqrt{\Delta x^2 + \Delta y^2}$$
$$= \sqrt{1^2 + 1^2}$$
$$= \sqrt{2}$$
$$\approx 1.414$$

New practice

- ① If $\angle A$ and $\angle B$ are a linear pair with $\angle A = n + 60$ and $\angle B = 4n + 20$, what is $\angle A$?



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

$$n + 60 + 4n + 20 = 180^\circ$$

$$5n + 80 = 180^\circ$$

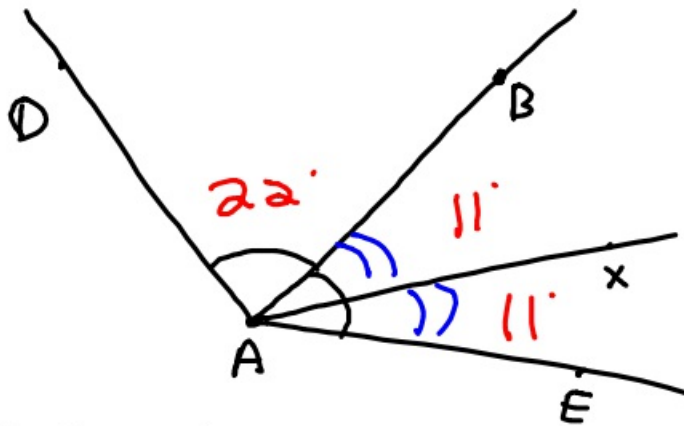
$$\begin{array}{r} 5n + 80 = 180^\circ \\ -80 \quad -80 \\ \hline 5n = 100 \end{array}$$

$$5n = 100$$

$$n = 20$$

$$\begin{aligned} \angle A &= n + 60 \\ &= 20 + 60 \\ &= 80^\circ \end{aligned}$$

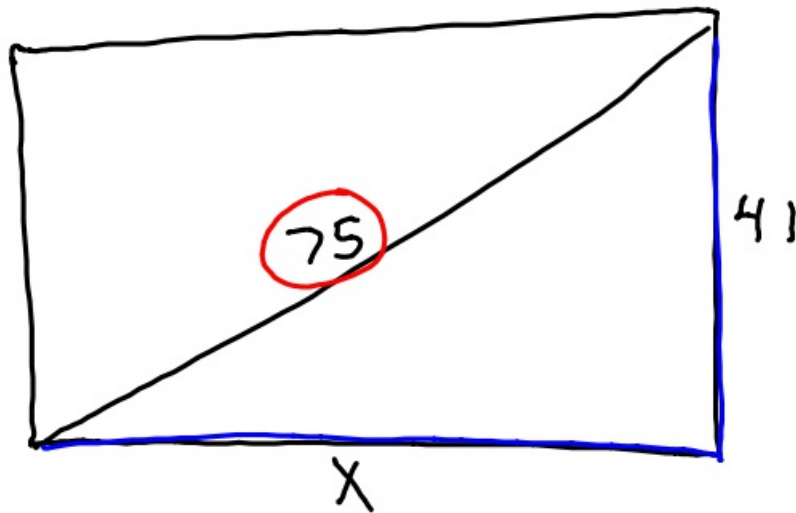
2



$$\angle XAE = 11^\circ$$

What is $\angle DAE$? 44°

32



$$X^2 + 41^2 = 75^2$$

$$X^2 + 1681 = 5625$$

$$\begin{array}{r} -1681 \quad -1681 \\ \hline \end{array}$$

$$\sqrt{X^2} = \sqrt{3944}$$

$$X \approx 62.8$$

④ If $A = (\underline{2}, \underline{5})$ and $B = (\underline{-1}, \underline{?})$,
What is AB ?

$$D = \sqrt{\Delta x^2 + \Delta y^2}$$

$$\sqrt{3^2 + 2^2}$$

$$\sqrt{9+4}$$

$$\sqrt{13}$$

$$\approx 3.6$$