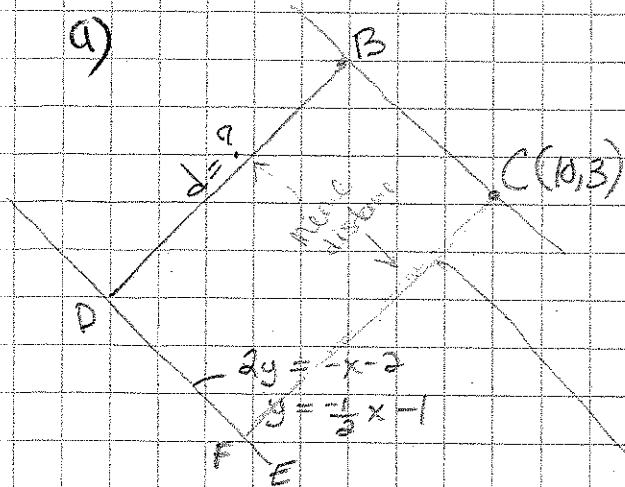


# feuille de travail

① DE:  $x + 2y + 2 = 0$     C(10, 3)

a)



$$BC: y = mx + b$$

$$y = -\frac{1}{2}x + b$$

$$3 = -\frac{1}{2}(10) + b$$

$$3 = -5 + b$$

$$b = 8$$

$$\rightarrow y = -\frac{1}{2}x + 8$$

$DB = CF$

$$\rightarrow y = mx + b$$

$$y = 2x + b$$

$$3 = 2(10) + b$$

$$3 = 20 + b$$

$$b = -17$$

$$y = 2x - 17$$

$$(2x - 17 = -\frac{1}{2}x - 1) \times 2$$

$$4x - 34 = -x - 2$$

$$5x = 32$$

$$x = \frac{32}{5}$$

$$y = 2\left(\frac{32}{5}\right) - 17$$

$$= \frac{64}{5} - \frac{85}{5}$$

$$= -\frac{21}{5}$$

$$\left(\frac{32}{5}, -\frac{21}{5}\right)$$

$$d_{DB} = d_{CF} = \sqrt{\left(\frac{32}{5} - \frac{30}{5}\right)^2 + \left(-\frac{21}{5} - 3\right)^2}$$

$$= \sqrt{\left(\frac{-18}{5}\right)^2 + \left(\frac{-36}{5}\right)^2}$$

$$= \sqrt{\frac{324}{25} + \frac{1296}{25}}$$

$$= \sqrt{\frac{1620}{25}}$$

$$= \sqrt{64.8}$$

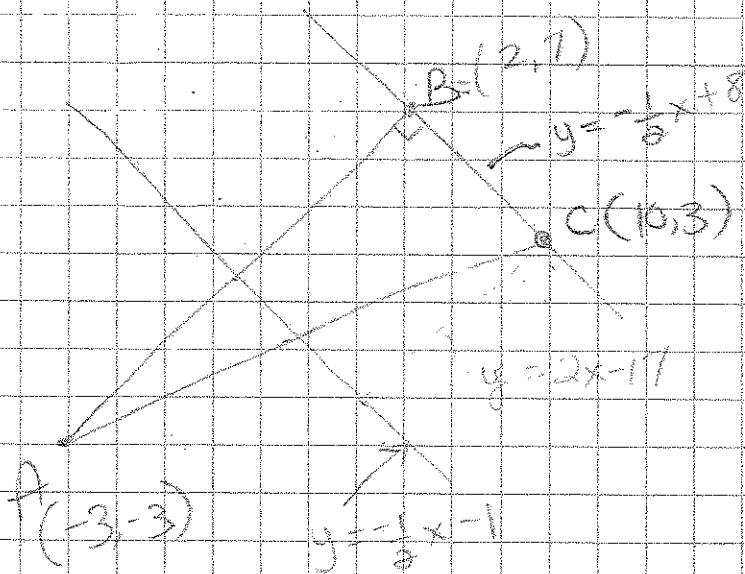
$$= \sqrt{64.8}$$

$$= 8,05$$

Le tronçon DB mesure 8,05 m.

b) A(-3,-3)

A-B-C-A



$$\begin{aligned}
 AB \rightarrow y &= 2x + b \\
 -3 &= 2(-3) + b \\
 -3 &= -6 + b \\
 b &= 3 \\
 y &= 2x + 3
 \end{aligned}$$

$$\begin{aligned}
 2x + 3 &= -\frac{1}{5}x + 8 \quad | \times 5 \\
 4x + 6 &= -x + 16 \\
 5x &= 10 \\
 x &= 2 \\
 y &= 2(2) + 3 \\
 y &= 7
 \end{aligned}$$

$$\begin{aligned}
 d_{AB} &= \sqrt{(-3-2)^2 + (-3-7)^2} \\
 &= \sqrt{25 + 100} \\
 &= \sqrt{125} \\
 &= 11,2
 \end{aligned}$$

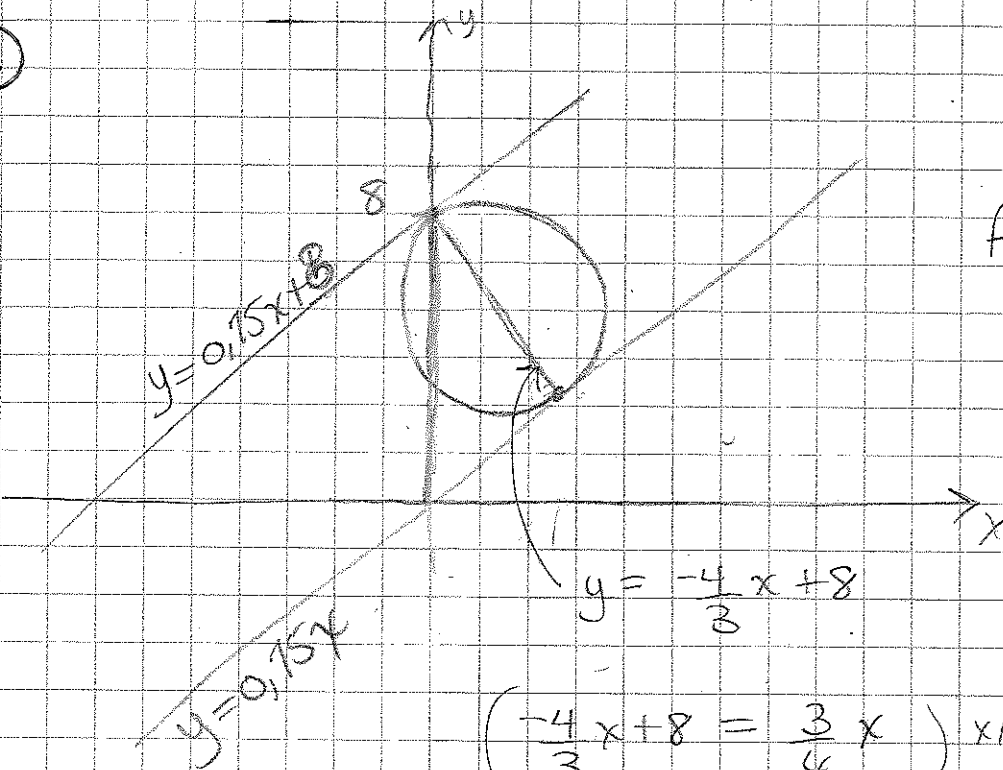
$$\begin{aligned}
 d_{BC} &= \sqrt{(10-2)^2 + (3-7)^2} \\
 &= \sqrt{64 + 16} \\
 &= \sqrt{80} = 8,9
 \end{aligned}$$

$$\begin{aligned}
 d_{AC} &= \sqrt{(-3-10)^2 + (-3-3)^2} \\
 &= \sqrt{169 + 36} \\
 &= \sqrt{205} = 14,3
 \end{aligned}$$

$$11,2 + 8,9 + 14,3 = 34,3$$

La distance parcourue est de 34,3 m.

2



$$A = \pi r^2$$

$$\left( \frac{-4}{3}x + 8 = \frac{3}{4}x \right) \times 12$$

$$-16x + 96 = 9x$$

$$96 = 25x$$

$$x = \frac{96}{25}$$

$$y = \frac{3}{4} \left( \frac{96}{25} \right)$$

$$= \frac{72}{25}$$

$$d = \sqrt{\left( \frac{96}{25} - 0 \right)^2 + \left( \frac{72}{25} - \frac{800}{25} \right)^2}$$

$$= \sqrt{\frac{9216}{625} + \frac{16384}{625}}$$

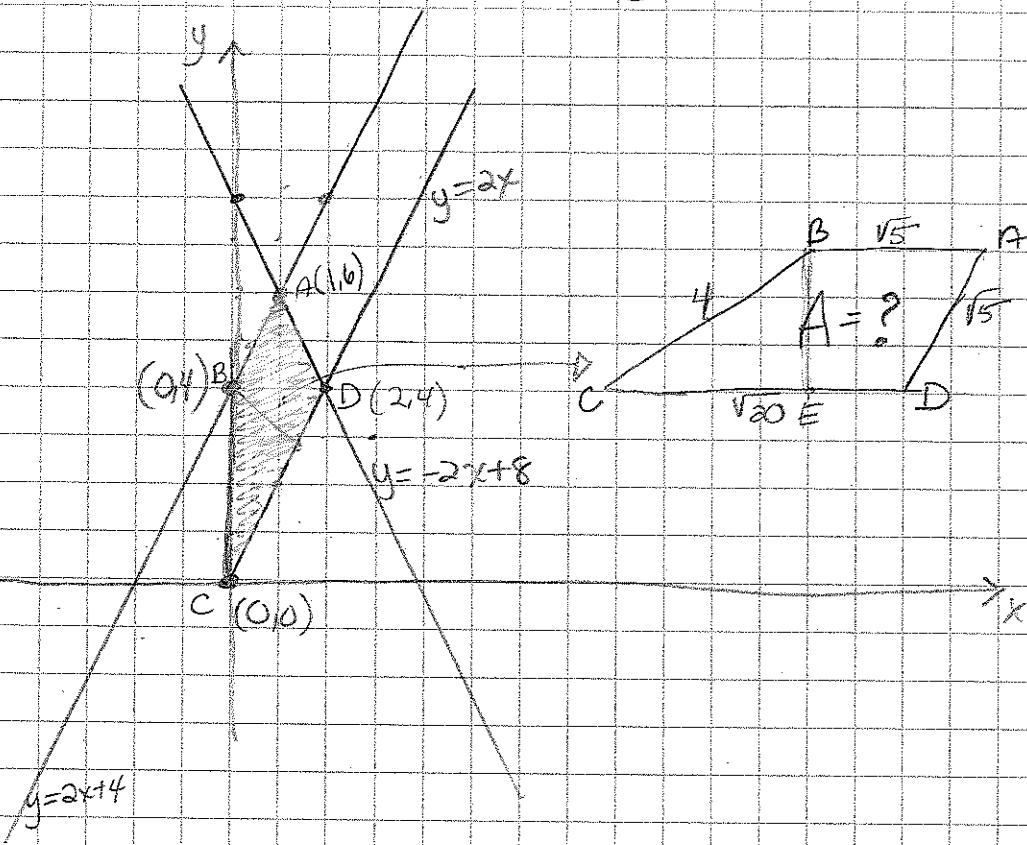
$$= \sqrt{\frac{25600}{625}}$$

$$= \sqrt{40,96}$$

$$= 6,4 \rightarrow \text{rayon} = 3,2 \Rightarrow A = \pi(3,2)^2$$

$$A = 32,17 \text{ units}^2$$

③  $x=0$      $y=2x+4$      $y=2x$      $y=-2x+8$



$$A = \frac{(b_1 b_2)}{2}$$

Ⓐ  $2x+4 = -2x+8$   
 $4x = 4$   
 $x = 1$   
 $y = 2(1)+4$   
 $y = 6$   
 $(1, 6)$

Ⓓ  $-2x+8 = 2x$   
 $8 = 4x$   
 $x = 2$   
 $y = 2(2) = 4$   
 $(2, 4)$

$$d_{AB} = \sqrt{(1-0)^2 + (6-4)^2}$$

$$= \sqrt{1+4}$$

$$= \sqrt{5}$$

$$d_{BD} = \sqrt{(1-2)^2 + (6-4)^2}$$

$$= \sqrt{1+4}$$

$$= \sqrt{5}$$

$$d_{DC} = \sqrt{(2-0)^2 + (4-0)^2}$$

$$= \sqrt{4+16}$$

$$= \sqrt{20}$$

$d_{BC} = 4$

Nautilus

Ⓑ  $y = mx+b$   
 $y = -\frac{1}{2}x + 4$   
 $y = -\frac{1}{2}x + 4$

Ⓔ  $(-\frac{1}{2}x+4 = 2x) \times 2$   
 $-x+8 = 4x$   
 $8 = 5x$   
 $x = \frac{8}{5}$   
 $y = 2(\frac{8}{5}) = \frac{16}{5}$

$(\frac{8}{5}, \frac{16}{5})$

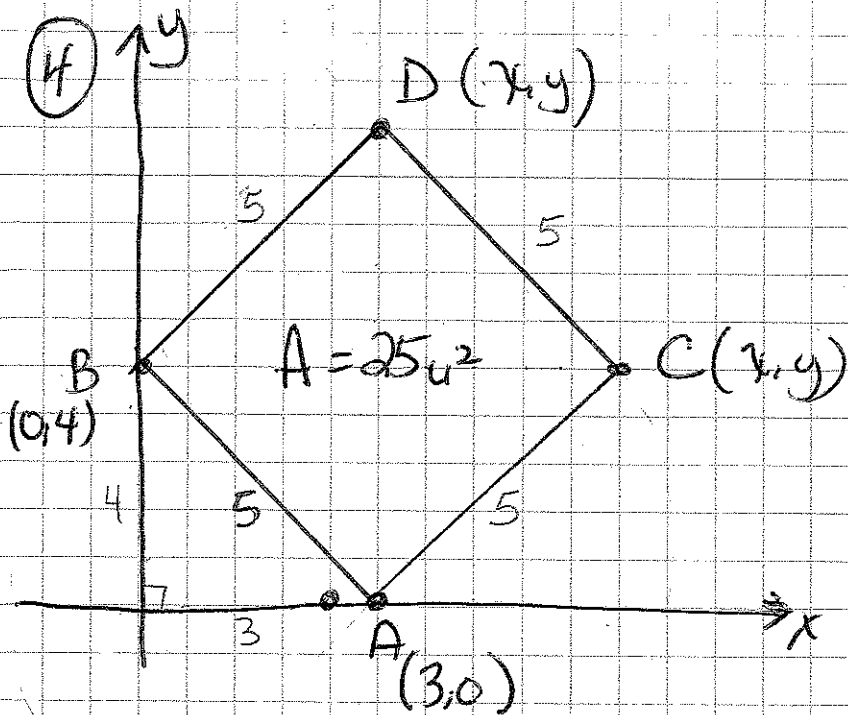
$$\begin{aligned}d_{BE} &= \sqrt{\left(\frac{8}{5} - 0\right)^2 + \left(\frac{16}{5} - \frac{40}{5}\right)^2} \\&= \sqrt{\frac{64}{25} + \left(\frac{-4}{5}\right)^2} \\&= \sqrt{\frac{64}{25} + \frac{16}{25}} \\&= \sqrt{\frac{80}{25}} \\&= \sqrt{3,2} = 1,79\end{aligned}$$

$$A = \frac{(2\sqrt{5})(\sqrt{20} + \sqrt{5})(1,79)}{2}$$

$$= \frac{(3\sqrt{5})(1,79)}{2}$$

$$= \frac{2,00769}{2}$$

$$A = 6$$



$$BA \rightarrow m = \frac{0-4}{3-0} = -\frac{4}{3}$$

$$y = -\frac{4}{3}x + 4$$

$$AC \rightarrow y = \frac{3}{4}x + b$$

$$0 = \frac{3}{4}(3) + b$$

$$-\frac{9}{4} = b$$

$$y = \frac{3}{4}x - \frac{9}{4}$$

$$BD \rightarrow y = \frac{3}{4}x + 4$$

$$DC \rightarrow y = -\frac{4}{3}x + b$$

$$d_{AC} \rightarrow 5 = \sqrt{(x-3)^2 + (y-0)^2}$$

$$5 = \sqrt{(x-3)^2 + y^2}$$

$$25 = (x-3)^2 + y^2$$

$$AC \rightarrow y = \frac{3}{4}x - \frac{9}{4}$$

$$25 = x^2 - 6x + 9 + \left(\frac{3}{4}x - \frac{9}{4}\right)^2$$

$$25 = x^2 - 6x + 9 + \frac{9}{16}x^2 - \frac{54x}{16} + \frac{81}{16}$$

$$400 = 16x^2 - 96x + 144 + 9x^2 - 54x + 81$$

$$400 = 25x^2 - 150x + 225$$

$$0 = 25x^2 - 150x - 175$$

$$0 = x^2 - 6x - 7$$

$$0 = (x-7)(x+1)$$

$$x = 7$$

$$x = -1$$

$$y = \frac{3}{4}(7) - \frac{9}{4}$$

$$= \frac{21}{4} - \frac{9}{4} = \frac{12}{4} = 3$$

C(7,3)

$$d_{BD} \rightarrow 5 = \sqrt{(x-0)^2 + (y-4)^2}$$

$$25 = x^2 + y^2 - 8y + 16$$

$$DC \rightarrow y = \frac{-4}{3}x + b$$

$$3 = \frac{-4}{3}(7) + b$$

$$\frac{9}{3} = \frac{-28}{3} + b$$

$$\frac{37}{3} = b \quad \rightarrow \left( y = \frac{-4}{3}x + \frac{37}{3} \right) \times 3$$

$$3y = -4x + 37$$

$$4x = -3y + 37$$

$$x = \frac{-3y + 37}{4}$$

$$25 = \left( \frac{-3y + 37}{4} \right)^2 + y^2 - 8y + 16$$

$$\left( 25 = \frac{9}{16}y^2 - \frac{222}{16}y + \frac{1369}{16} + y^2 - 8y + 16 \right) \times 16$$

$$400 = 9y^2 - 222y + 1369 + 16y^2 - 128y + 256$$

$$0 = 25y^2 - 350y + 1225$$

$$0 = y^2 - 14y + 49$$

$$0 = (y-7)(y-7)$$

$$y=7 \rightarrow x = \frac{-3}{4}(7) + \frac{37}{4}$$

$$= \frac{-21}{4} + \frac{37}{4}$$

$$= \frac{16}{4} = 4$$

$D(4,7)$