

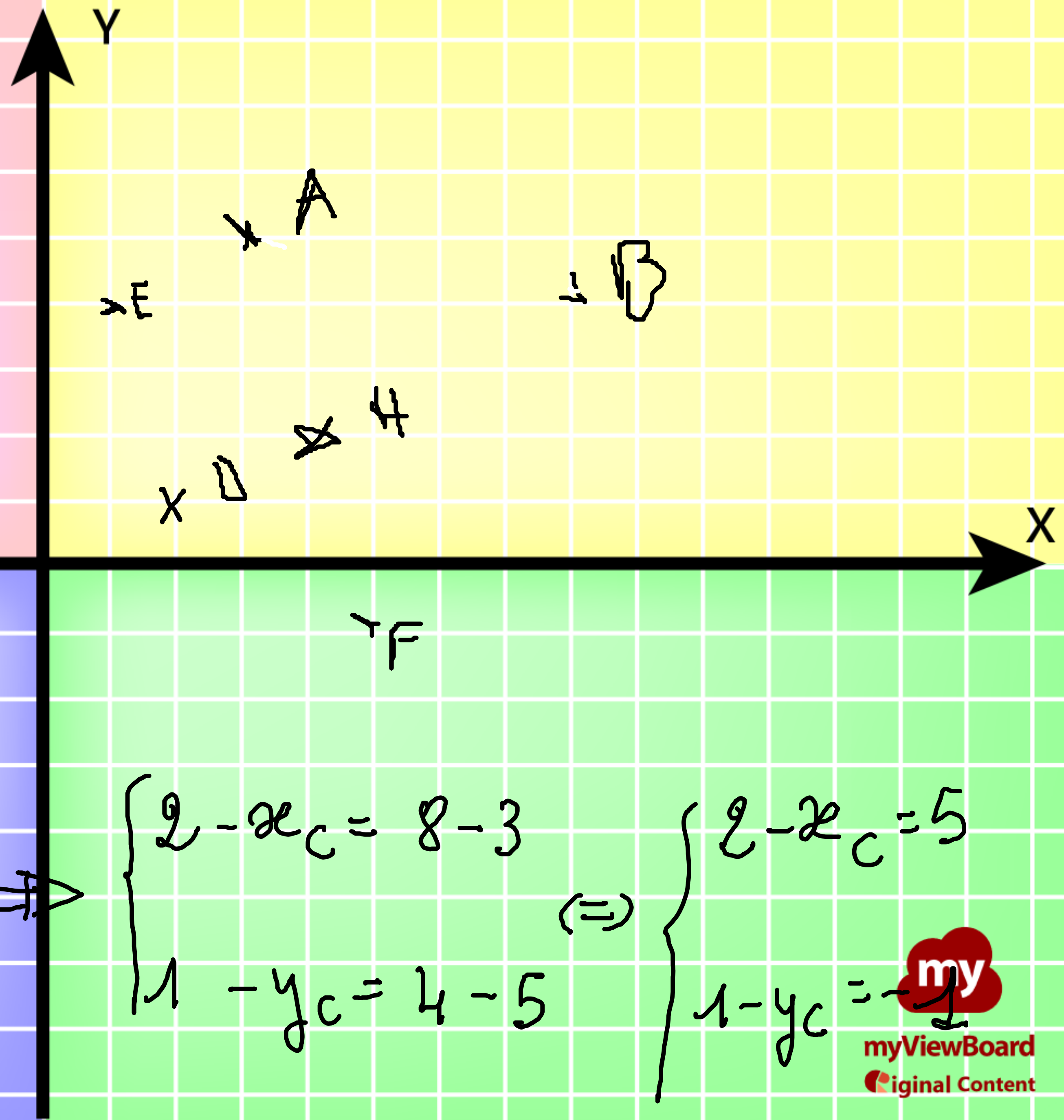
A(3;5) B(8;4) D(2;1) E(1;4) F(5;-1)

H(4;2)

$$\begin{cases} x_c = -3 \\ y_c = 2 \end{cases}$$

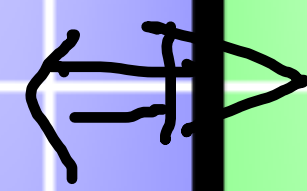
C(-3; +2)

C x

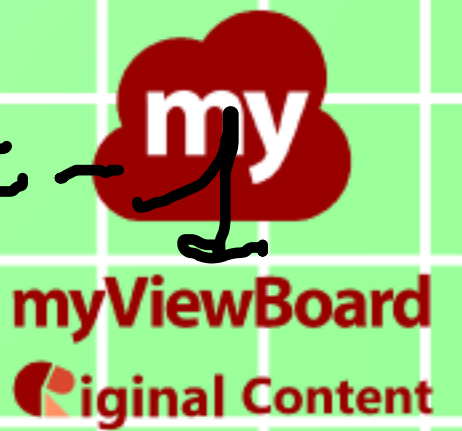


$$\vec{CD} = \vec{AB}$$

$$\begin{cases} x_D - x_C = x_B - x_A \\ y_D - y_C = y_B - y_A \end{cases}$$



$$\begin{cases} 2 - x_c = 8 - 3 \\ 1 - y_c = 4 - 5 \end{cases} \Leftrightarrow \begin{cases} 2 - x_c = 5 \\ 1 - y_c = -1 \end{cases}$$

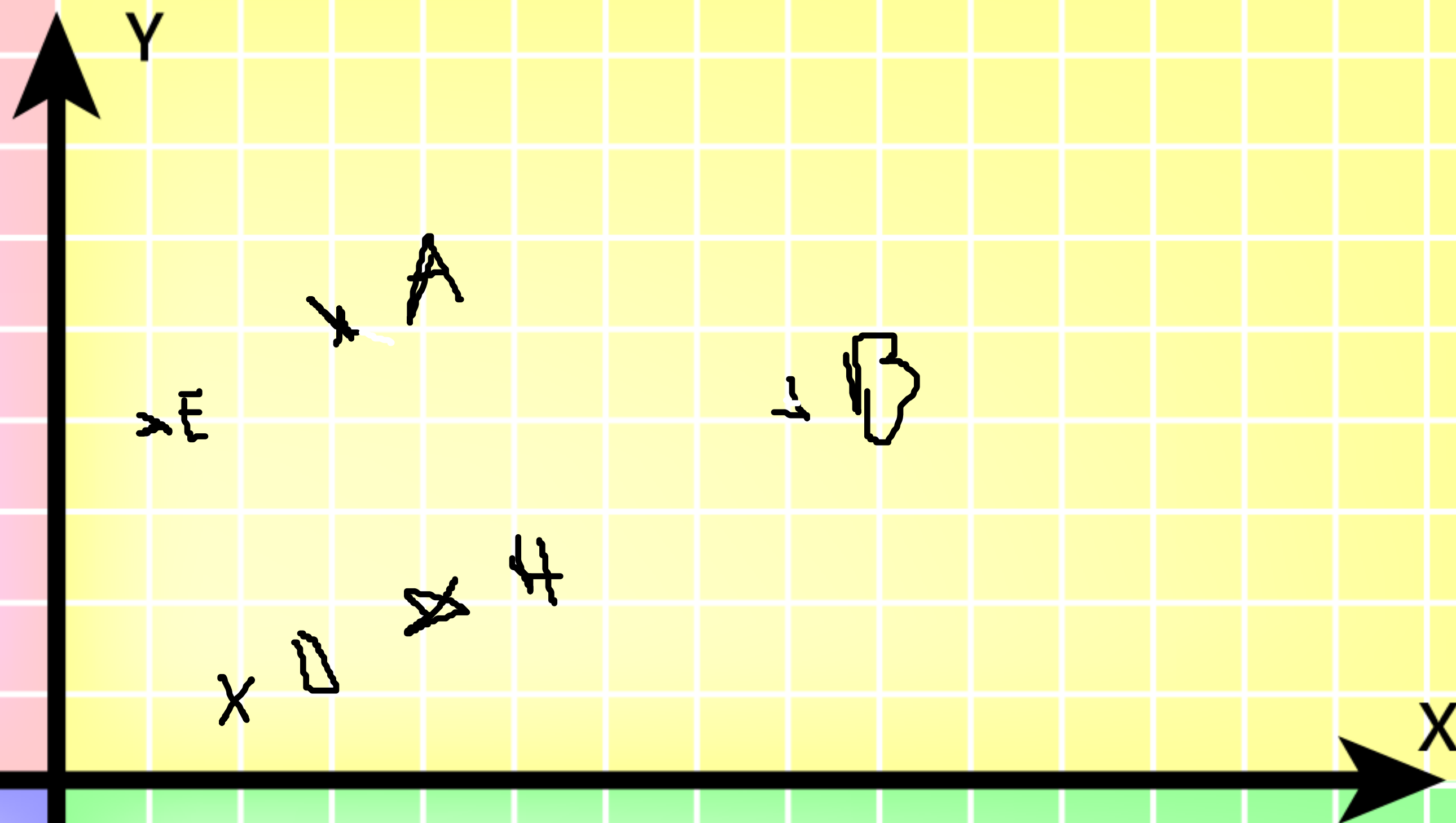


C(-3; +2)

$$AB = \sqrt{26}$$

$$BD = 3\sqrt{5}$$

C x



$$AB = \sqrt{(x_B - x_A)^2 + (y_B - y_A)^2}$$

$$AB = \sqrt{(8 - 3)^2 + (4 - 5)^2}$$

$$AB = \sqrt{5^2 + (-1)^2} = \sqrt{26}$$

$$BD = \sqrt{(x_D - x_B)^2 + (y_D - y_B)^2}$$

$$BD = \sqrt{(2 - 8)^2 + (1 - 4)^2}$$

$$BD = \sqrt{36 + 9} = \sqrt{45}$$



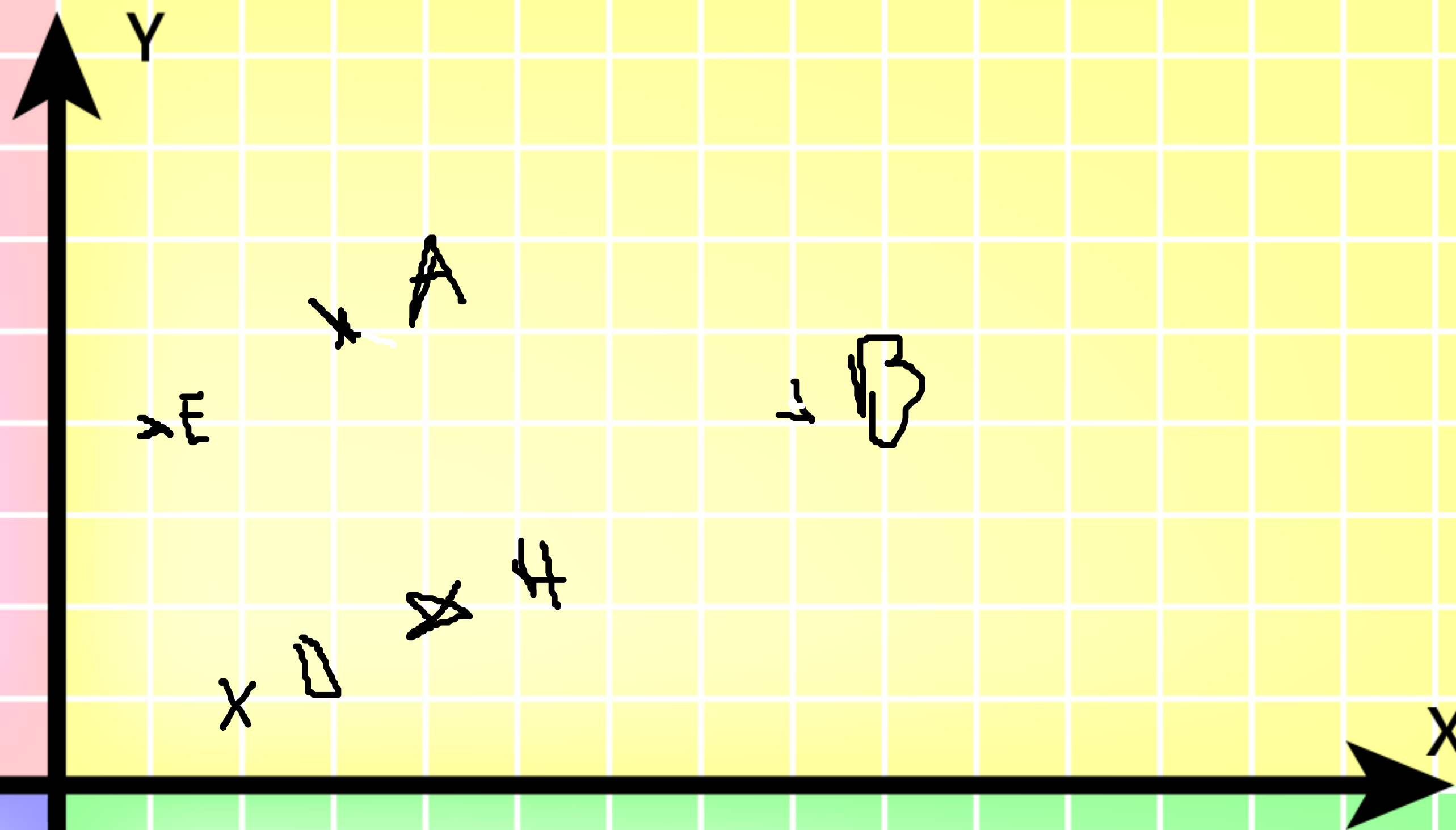
$$C(-3; +2)$$

$$\vec{ED} \begin{pmatrix} x_D - x_E \\ y_D - y_E \end{pmatrix} \quad \vec{ED} \begin{pmatrix} 2 - 1 \\ 1 - 4 \end{pmatrix}$$

$$\vec{AF} \begin{pmatrix} x_F - x_A \\ y_F - y_A \end{pmatrix} \quad \vec{AF} \begin{pmatrix} 5 - 3 \\ -1 - 5 \end{pmatrix}$$

$$\vec{ED} \begin{pmatrix} 1 \\ -3 \end{pmatrix} \quad \vec{AF} \begin{pmatrix} 2 \\ -6 \end{pmatrix}$$

$$1 \times (-6) - (-3) \times 2 = 0$$



(\vec{ED}) et (\vec{AF}) sont //

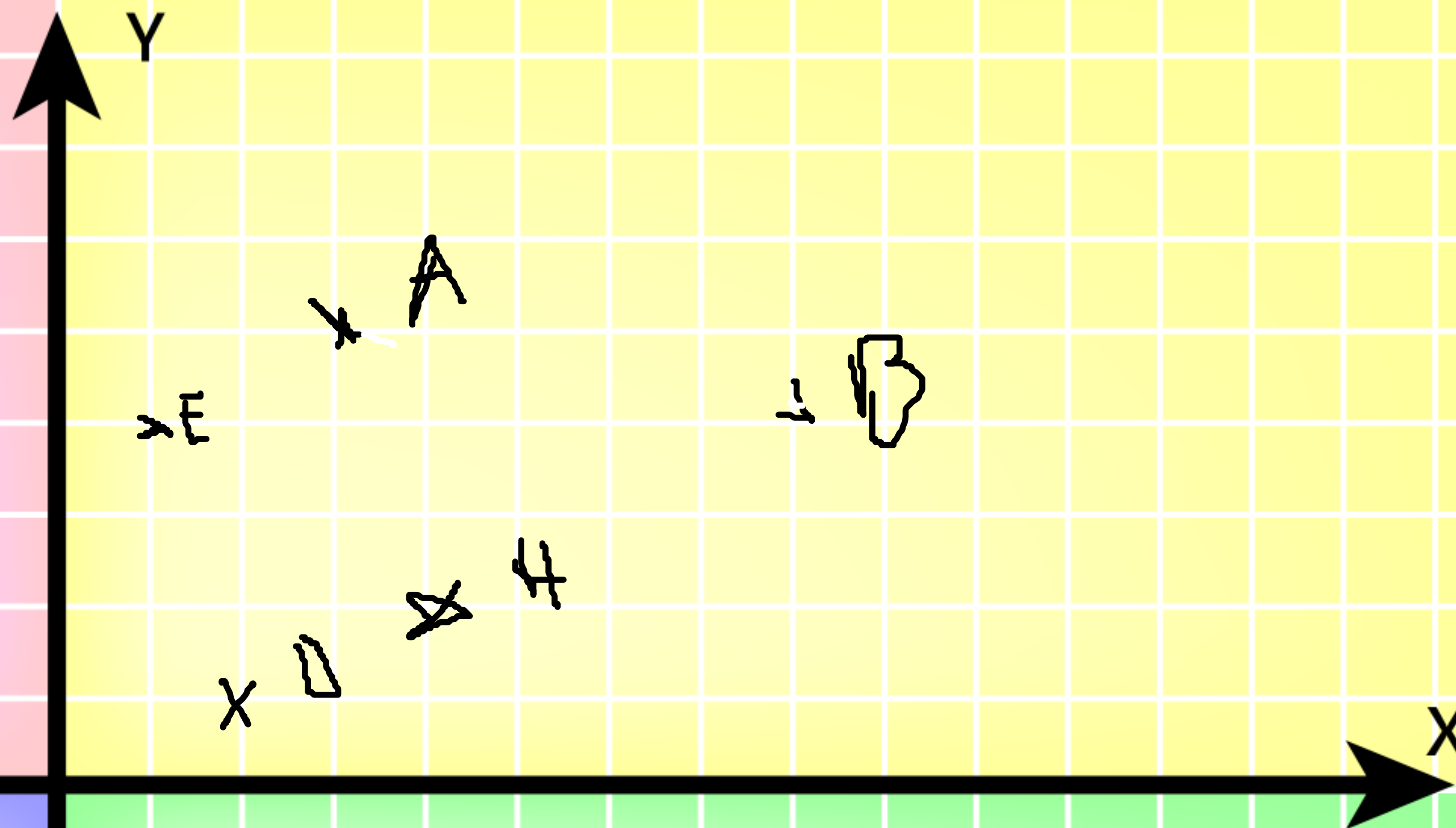
Donc \vec{ED} et \vec{AF} sont colinéaires

$C(-3; +2)$

$$k \vec{ED} = \vec{AF}$$

$k?$

$C \times$



$$\vec{ED} \begin{pmatrix} 1 \\ -3 \end{pmatrix} \quad \vec{AF} \begin{pmatrix} 2 \\ -6 \end{pmatrix}$$

$$\left. \begin{aligned} 1 \times k &= 2 \\ -3 \times k &= -6 \end{aligned} \right\}$$

$$\left. \begin{aligned} k &= \frac{2}{1} \\ k &= \frac{-6}{-3} \end{aligned} \right\} \rightarrow k=2$$

$$\vec{ED} \begin{pmatrix} x_{\vec{ED}} \\ y_{\vec{ED}} \end{pmatrix} \quad \vec{AF} \begin{pmatrix} x_{\vec{AF}} \\ y_{\vec{AF}} \end{pmatrix}$$

$$k \vec{ED} \begin{pmatrix} k x_{\vec{ED}} \\ k y_{\vec{ED}} \end{pmatrix} \rightarrow \begin{aligned} k x_{\vec{ED}} &= x_{\vec{AF}} \\ k y_{\vec{ED}} &= y_{\vec{AF}} \end{aligned}$$



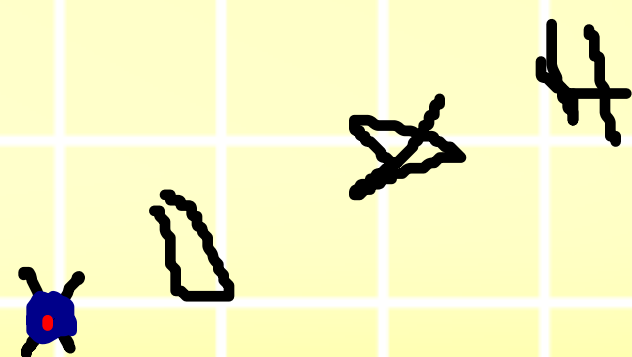
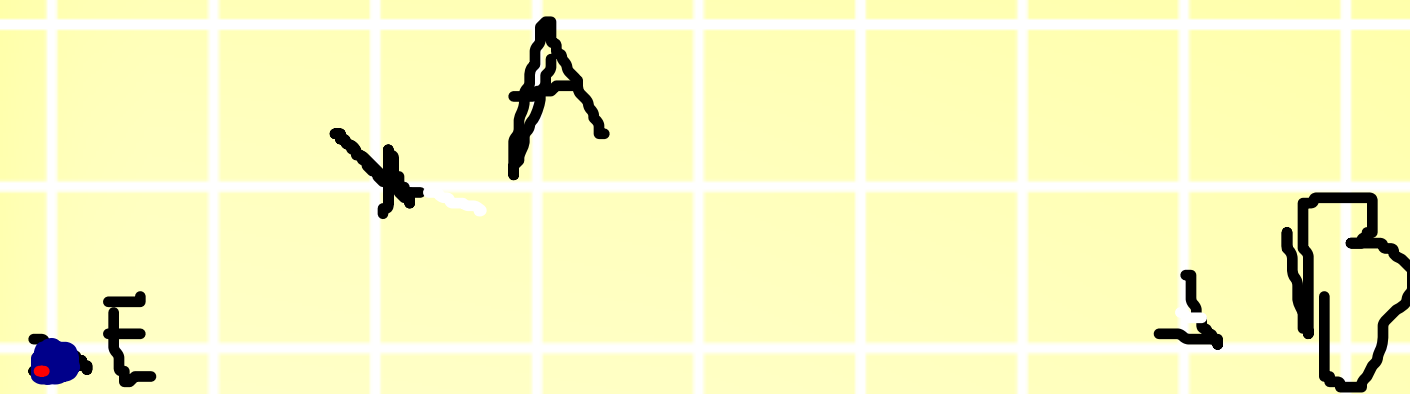
$$C(-3; +2)$$

G

$$G(0; m)$$

$m?$ \rightarrow G E et D
alignés

C x



$$\vec{ED} \begin{pmatrix} 1 \\ -3 \end{pmatrix}$$

$$\vec{EG} \begin{pmatrix} 0 - 1 \\ m - 4 \end{pmatrix}$$

$$1(m-4) - (-3)(-1) = 0$$

$$m - 4 - 3 = 0 \Leftrightarrow m = 7$$

$$G(0; 7)$$



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$[EH]$ milieu de $[AD]$ $C(-3; +2)$ G

K milieu de $[AD]$

$$K \left(\frac{x_A + x_D}{2}, \frac{y_A + y_D}{2} \right)$$

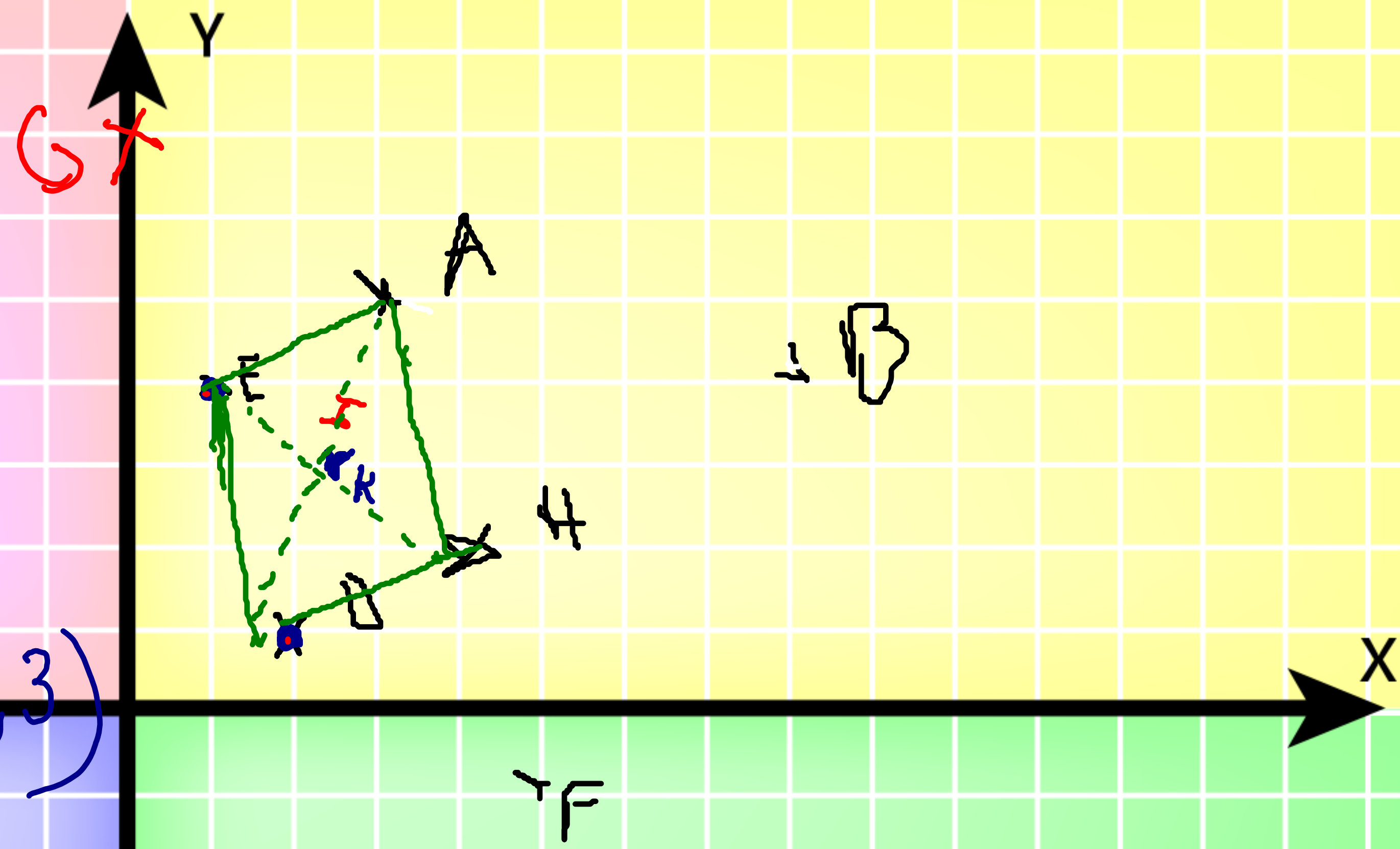
$$K \left(\frac{3+2}{2}, \frac{5+1}{2} \right)$$

$$K \left(\frac{5}{2}; 3 \right)$$

I milieu $[EH]$

$$I \left(\frac{x_E + x_H}{2}; \frac{y_E + y_H}{2} \right)$$

$$I \left(\frac{1+4}{2}; \frac{4+2}{2} \right) \quad I \left(\frac{5}{2}; 3 \right)$$



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