

Exercice 1.37

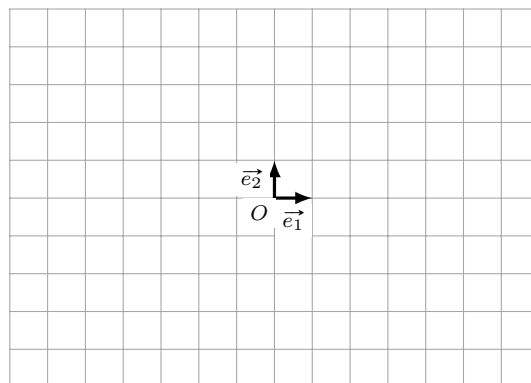
a) $C(-3; 5) \Leftrightarrow \overrightarrow{OC} = \begin{pmatrix} \dots\dots\dots \\ \dots\dots\dots \end{pmatrix}$

b) $\overrightarrow{OD} = \begin{pmatrix} 4 \\ -3 \end{pmatrix} \Leftrightarrow D(\dots\dots\dots; \dots\dots\dots)$

c) $\overrightarrow{EO} = \begin{pmatrix} 6 \\ 4 \end{pmatrix} \Leftrightarrow E(\dots\dots\dots; \dots\dots\dots)$

d) $\vec{f} = \begin{pmatrix} 5 \\ 4 \end{pmatrix} \Leftrightarrow F(\dots\dots\dots; \dots\dots\dots)$

e) $\overrightarrow{GH} = \begin{pmatrix} 10 \\ 5 \end{pmatrix} \Leftrightarrow G(\dots\dots\dots; \dots\dots\dots) \text{ et } H(\dots\dots\dots; \dots\dots\dots)$

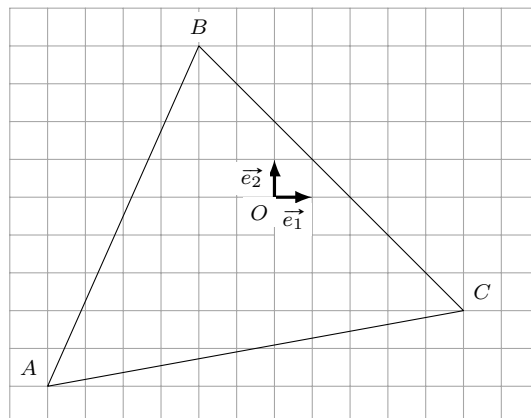
**Exercice 1.38**

On donne $A(-6; -5)$, $B(-2; 4)$ et $C(5; -3)$. Calculer :

a) $\overrightarrow{AB} =$

b) $\overrightarrow{AC} =$

c) $\overrightarrow{CB} =$

**Exercice 1.39**

On donne $D(-10; -3)$, $E(12; 20)$, $F(2/3; -1/3)$ et $G(1/6; -2/3)$. Calculer :

a) $\overrightarrow{ED} =$

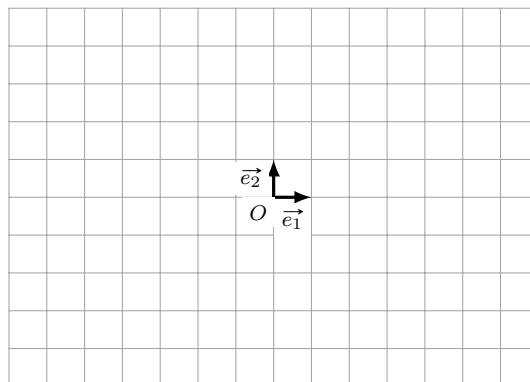
b) $\overrightarrow{GF} =$

c) $\overrightarrow{DF} =$

d) $3\overrightarrow{EF} - 2\overrightarrow{GD} =$

Exercice 1.40

a) On donne $C(6; -2)$ et $\overrightarrow{CD} = \begin{pmatrix} -8 \\ 4 \end{pmatrix}$.
 Trouver D :

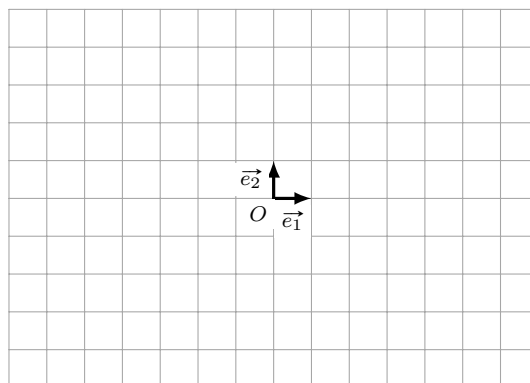


b) On donne $E(-5; -4)$ et $\overrightarrow{FE} = \begin{pmatrix} -4 \\ 1 \end{pmatrix}$.
 Trouver F :

Exercice 1.41

On donne $E(-4; 0)$, $F(4; -3)$ et $G(6; 1)$.

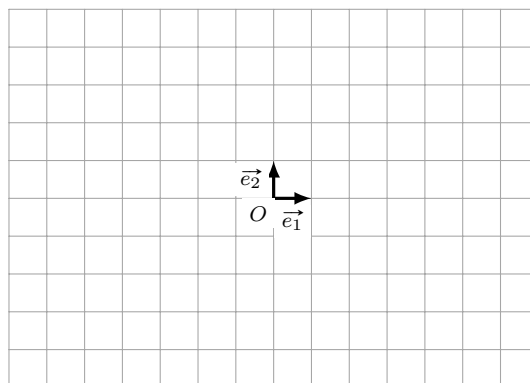
Trouver H tel que $EFGH$ soit un parallélogramme :



Exercice 1.42

On donne $E(-4; 0)$, $F(4; -3)$ et $G(6; 1)$.

Trouver H tel que $EHFG$ soit un parallélogramme :



Exercice 1.37

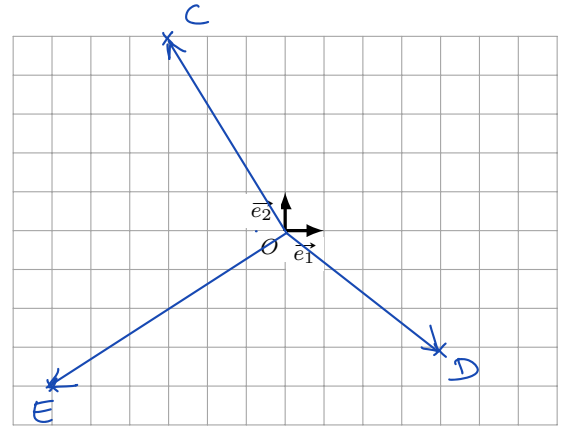
a) $C(-3; 5) \Leftrightarrow \vec{OC} = \begin{pmatrix} -3 \\ 5 \end{pmatrix}$

b) $\vec{OD} = \begin{pmatrix} 4 \\ -3 \end{pmatrix} \Leftrightarrow D(4; -3)$

c) $\vec{EO} = \begin{pmatrix} 6 \\ 4 \end{pmatrix} \Leftrightarrow E(-6; -4)$

d) $\vec{f} = \begin{pmatrix} 5 \\ 4 \end{pmatrix} \Leftrightarrow F(\dots; \dots)$ indéterminé!

e) $\vec{GH} = \begin{pmatrix} 10 \\ 5 \end{pmatrix} \Leftrightarrow G(\dots; \dots)$ et $H(\dots; \dots)$ indéterminés!



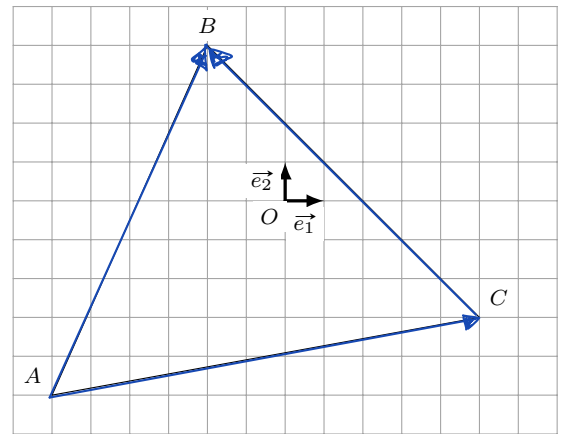
Exercice 1.38

On donne $A(-6; -5)$, $B(-2; 4)$ et $C(5; -3)$. Calculer :

a) $\vec{AB} = \vec{OB} - \vec{OA} = \begin{pmatrix} -2 \\ 4 \end{pmatrix} - \begin{pmatrix} -6 \\ -5 \end{pmatrix} = \begin{pmatrix} 4 \\ 9 \end{pmatrix}$

b) $\vec{AC} = \vec{OC} - \vec{OA} = \begin{pmatrix} 5 \\ -3 \end{pmatrix} - \begin{pmatrix} -6 \\ -5 \end{pmatrix} = \begin{pmatrix} 11 \\ 2 \end{pmatrix}$

c) $\vec{CB} = \vec{OB} - \vec{OC} = \begin{pmatrix} -2 \\ 4 \end{pmatrix} - \begin{pmatrix} 5 \\ -3 \end{pmatrix} = \begin{pmatrix} -7 \\ 7 \end{pmatrix}$



Exercice 1.39

On donne $D(-10; -3)$, $E(12; 20)$, $F(2/3; -1/3)$ et $G(1/6; -2/3)$. Calculer :

a) $\vec{ED} = \begin{pmatrix} -10 \\ -3 \end{pmatrix} - \begin{pmatrix} 12 \\ 20 \end{pmatrix} = \begin{pmatrix} -22 \\ -23 \end{pmatrix}$

b) $\vec{GF} = \begin{pmatrix} 2/3 \\ -1/3 \end{pmatrix} - \begin{pmatrix} 1/6 \\ -2/3 \end{pmatrix} = \begin{pmatrix} 4/6 - 1/6 \\ -1/3 + 2/3 \end{pmatrix} = \begin{pmatrix} 3/6 \\ 1/3 \end{pmatrix} = \begin{pmatrix} 1/2 \\ 1/3 \end{pmatrix}$

c) $\vec{DF} = \begin{pmatrix} 2/3 \\ -1/3 \end{pmatrix} - \begin{pmatrix} -10 \\ -3 \end{pmatrix} = \begin{pmatrix} 2/3 + 30/3 \\ -1/3 + 10/3 \end{pmatrix} = \begin{pmatrix} 32/3 \\ 8/3 \end{pmatrix}$

d) $3\vec{EF} - 2\vec{GD} = \begin{pmatrix} -34 \\ -61 \end{pmatrix} + \begin{pmatrix} 61/3 \\ 14/3 \end{pmatrix} = \begin{pmatrix} -102/3 + 61/3 \\ -183/3 + 14/3 \end{pmatrix} = \begin{pmatrix} -41/3 \\ -169/3 \end{pmatrix}$

$\vec{EF} = \begin{pmatrix} 2/3 \\ -1/3 \end{pmatrix} - \begin{pmatrix} 12 \\ 20 \end{pmatrix} = \begin{pmatrix} 2/3 - 36/3 \\ -1/3 - 60/3 \end{pmatrix} = \begin{pmatrix} -34/3 \\ -61/3 \end{pmatrix}$

$\Rightarrow 3\vec{EF} = \begin{pmatrix} -34 \\ -61 \end{pmatrix}$

$\vec{GD} = \begin{pmatrix} -10 \\ -3 \end{pmatrix} - \begin{pmatrix} 1/6 \\ -2/3 \end{pmatrix} = \begin{pmatrix} -60/6 - 1/6 \\ -9/3 + 2/3 \end{pmatrix} = \begin{pmatrix} -61/6 \\ -7/3 \end{pmatrix}$

$\Rightarrow -2\vec{GD} = \begin{pmatrix} 61/3 \\ 14/3 \end{pmatrix}$

Exercice 1.40

a) On donne $C(6; -2)$ et $\overrightarrow{CD} = \begin{pmatrix} -8 \\ 4 \end{pmatrix}$.

Trouver D :

$$\overrightarrow{OD} = \overrightarrow{OC} + \overrightarrow{CD} = \begin{pmatrix} 6 \\ -2 \end{pmatrix} + \begin{pmatrix} -8 \\ 4 \end{pmatrix} = \begin{pmatrix} -2 \\ 2 \end{pmatrix}$$

$$\Rightarrow \underline{D(-2; 2)}$$

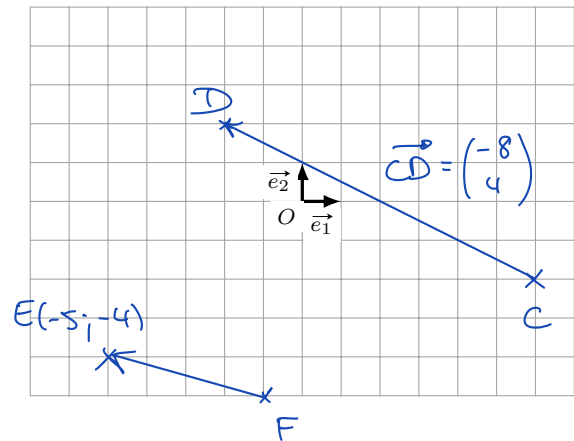
b) On donne $E(-5; -4)$ et $\overrightarrow{FE} = \begin{pmatrix} -4 \\ 1 \end{pmatrix}$.

Trouver F :

$$\overrightarrow{OF} = \overrightarrow{OE} + \overrightarrow{EF}$$

$$= \begin{pmatrix} -5 \\ -4 \end{pmatrix} + \begin{pmatrix} 4 \\ -1 \end{pmatrix} = \begin{pmatrix} -1 \\ -5 \end{pmatrix}$$

$$\Rightarrow \underline{F(-1; -5)}$$



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On donne $E(-4; 0)$, $F(4; -3)$ et $G(6; 1)$.

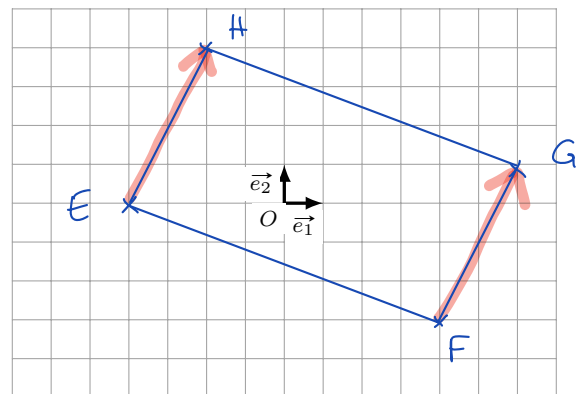
Trouver H tel que $EFGH$ soit un parallélogramme : $\Leftrightarrow \underline{\overrightarrow{EH} = \overrightarrow{FG}}$

$$\overrightarrow{FG} = \begin{pmatrix} 6 \\ 1 \end{pmatrix} - \begin{pmatrix} 4 \\ -3 \end{pmatrix} = \begin{pmatrix} 2 \\ 4 \end{pmatrix}$$

$$\overrightarrow{OH} = \overrightarrow{OE} + \overrightarrow{EH} = \overrightarrow{OE} + \overrightarrow{FG}$$

$$= \begin{pmatrix} -4 \\ 0 \end{pmatrix} + \begin{pmatrix} 2 \\ 4 \end{pmatrix} = \begin{pmatrix} -2 \\ 4 \end{pmatrix}$$

$$\Rightarrow \underline{H(-2; 4)}$$



Exercice 1.42

On donne $E(-4; 0)$, $F(4; -3)$ et $G(6; 1)$.

Trouver H tel que $EHFG$ soit un parallélogramme : $\Leftrightarrow \underline{\overrightarrow{EH} = \overrightarrow{GF}}$

$$\overrightarrow{GF} = \begin{pmatrix} 4 \\ -3 \end{pmatrix} - \begin{pmatrix} 6 \\ 1 \end{pmatrix} = \begin{pmatrix} -2 \\ -4 \end{pmatrix}$$

$$\overrightarrow{OH} = \overrightarrow{OE} + \overrightarrow{EH} = \overrightarrow{OE} + \overrightarrow{GF}$$

$$= \begin{pmatrix} -4 \\ 0 \end{pmatrix} + \begin{pmatrix} -2 \\ -4 \end{pmatrix} = \begin{pmatrix} -6 \\ -4 \end{pmatrix}$$

$$\Rightarrow \underline{H(-6; -4)}$$

