

## Exercice 1

$$a) 3 \cdot 39 - 8 \cdot 13 = 13 \Rightarrow (39; 13) \in d$$

$$3 \cdot 1.55 - 8 \cdot (-1.05) = 13.05 \Rightarrow (1.55; -1.05) \notin d$$

$$b) 3x - 8y = 13$$

$$y = \frac{3}{8}x - \frac{13}{8} \Rightarrow -\frac{13}{8} \text{ ord. à l'origine}$$

$$c) x = 5 \Rightarrow 3 \cdot 5 - 8y = 13$$

$$8y = 15 - 13 \Rightarrow y = \frac{1}{4}$$

$$d) \begin{cases} 3x - 8y = 13 \\ x + 4y = -9 \end{cases} \begin{array}{c|c|c} y & x & \\ \hline 1 & 1 & \\ \hline 2 & (-3) & \end{array} \Rightarrow \begin{cases} 5x = -5 \\ -20y = 40 \end{cases} \Rightarrow \begin{cases} x = -1 \\ y = -2 \end{cases}$$

(-1 | -2)

## Exercice 2

$$\vec{AB} = \begin{pmatrix} 2 \\ 1 \end{pmatrix} - \begin{pmatrix} 1 \\ 3 \end{pmatrix} = \begin{pmatrix} 1 \\ -2 \end{pmatrix}$$

$$\text{vectorielle : } \begin{pmatrix} x \\ y \end{pmatrix} = \begin{pmatrix} 2 \\ 1 \end{pmatrix} + k \begin{pmatrix} 1 \\ -2 \end{pmatrix}, k \in \mathbb{R}$$

$$\text{systeme } \begin{cases} x = 2 + k \\ y = 1 - 2k \end{cases}, k \in \mathbb{R}$$

### Exercice 3

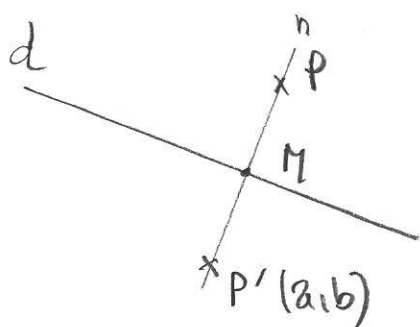
$$M_{AB} \left( \frac{7+1}{2}; \frac{3+9}{2} \right) \Rightarrow M_{AB} (4; 6)$$

$$(CM_{AB}): \quad \frac{y-6}{x-4} = \frac{1-6}{3-4} = \frac{-5}{-1} = \frac{5}{1}$$

$$y-6 = 5x-20$$

$$\Rightarrow 5x - y - 14 = 0$$

### Exercice 4



$$(n): 5x - 3y + c = 0$$

$$P \in n: 5 \cdot 7 - 3 \cdot 3 + c = 0 \Rightarrow c = -26$$

$$(n): 5x - 3y - 26 = 0$$

$$M: \begin{cases} 5x - 3y = 26 \\ 3x + 5y = 2 \end{cases} \begin{array}{l} \cdot 5 \\ \cdot 3 \end{array} \begin{array}{l} \cdot 3 \\ \cdot (-5) \end{array} \begin{array}{l} \cdot 2 \\ \cdot 2 \end{array} \Rightarrow \begin{cases} 34x = 136 \\ -34y = 68 \end{cases} \Rightarrow \begin{cases} x = 4 \\ y = -2 \end{cases}$$

$$\text{Donc } \begin{cases} a+7=8 \\ b+3=-4 \end{cases} \Rightarrow \begin{cases} a=1 \\ b=-7 \end{cases} \quad \text{Symétrique } (1; -7)$$

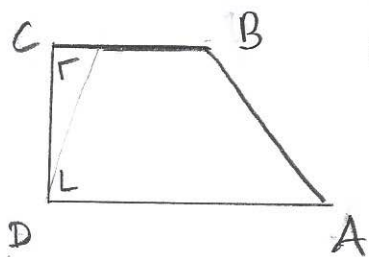
### Exercice 5

$$(d'): -2x + 3y + c = 0$$

$$(3; 7) \in d': -2 \cdot 3 + 3 \cdot 7 + c = 0 \Rightarrow c = -15$$

$$(d'): -2x + 3y - 15 = 0$$

## Exercise 6



$$(d): x + 3y - 20 = 0$$

$$A(5; 3) \notin d$$

$$B(8; 4) \in d$$

$$C(11; 3) \in d$$

$$\Rightarrow d \equiv BC$$

$$(AD): x + 3y + c = 0$$

$$A \in AD: 5 + 9 = -c \Rightarrow c = -14$$

$$(AD): x + 3y - 14 = 0$$

$$(CD): 3x - y + d = 0$$

$$C \in CD: 3 \cdot 11 - 3 + d = 0 \Rightarrow d = -30$$

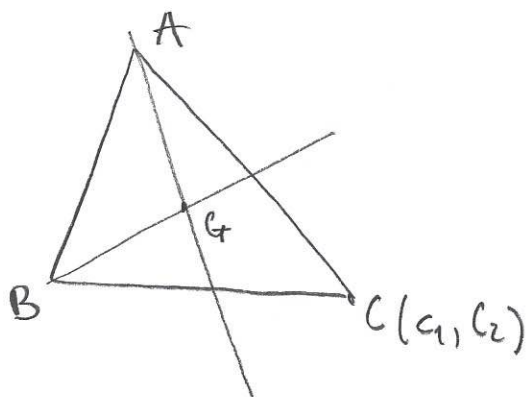
$$(CD): 3x - y - 30 = 0$$

$$D: \begin{cases} x + 3y - 14 = 0 \\ 3x - y - 30 = 0 \end{cases} \left| \begin{array}{l} \cdot 3 \\ \cdot 1 \end{array} \right| \begin{array}{l} x \\ y \end{array} \left| \begin{array}{l} 3 \\ -1 \end{array} \right|$$

$$\begin{cases} 10x = 104 \\ 10y = 12 \end{cases} \Rightarrow \begin{cases} x = 10.4 \\ y = 1.2 \end{cases}$$

$$\Rightarrow D(10.4; 1.2)$$

## Exercise 7



$$\frac{c_1 + 4 + 9}{3} = 8 \Rightarrow c_1 = 11$$

$$\frac{c_2 + 4 + 1}{3} = 4 \Rightarrow c_2 = 7$$

$$C(11; 7)$$