

wow ça c'est très incliné!



Pente

Ce n'est pas beaucoup incliné...



Comment peut-on montrer avec la math, lequel est plus incliné?

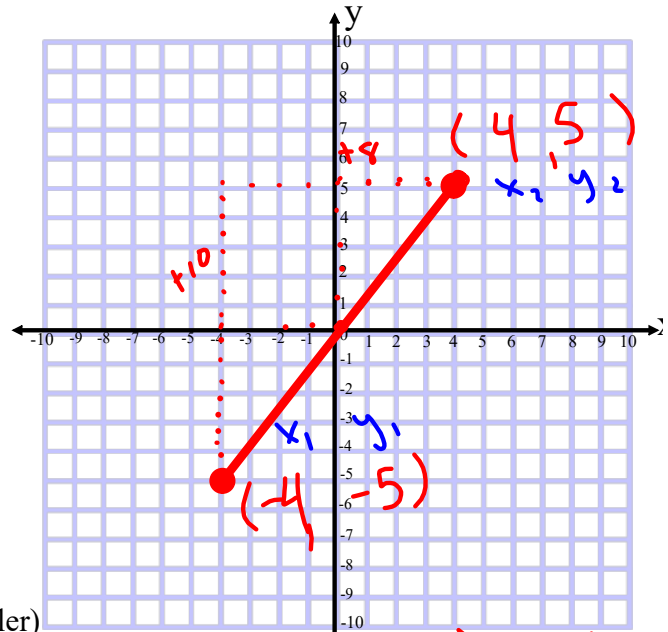
Donne un nombre à l'inclinaison!

Pente

(slope)
m

- une mesure d'inclinaison
- est représenté par le variable "m"
- peut être calculer de plusieurs façons
- est aussi connu comme taux de variation

<https://www.youtube.com/watch?v=4nkNtC4KkQ0>



(compter)

$$m = \frac{\text{l'élévation}}{\text{la course}} = \frac{\text{rise}}{\text{run}}$$

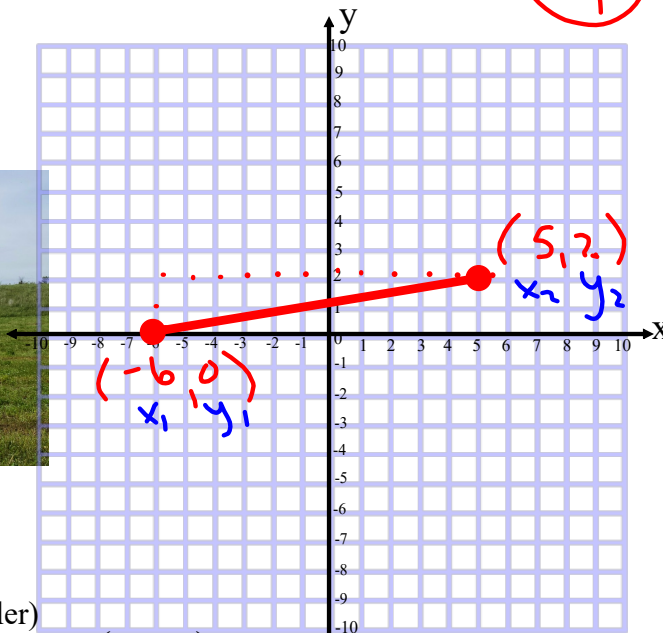
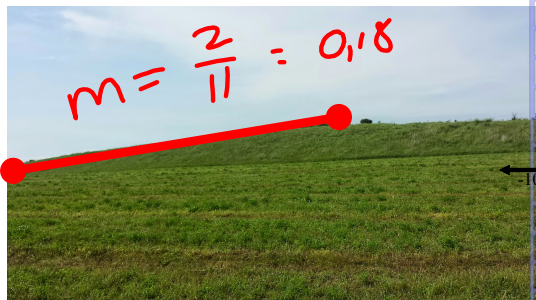
(calculer)

$$m = \frac{(y_2 - y_1)}{(x_2 - x_1)} = \frac{5 - (-5)}{4 - (-4)} = \frac{10}{8}$$

$$m = \frac{10}{8}$$

$$m = \frac{5}{4} = 1,25$$

$$= \frac{5}{4}$$



(compter)

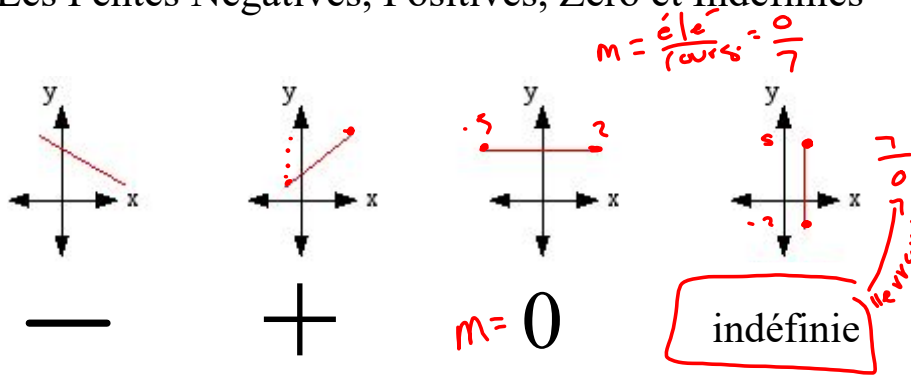
$$m = \frac{\text{l'élévation}}{\text{la course}} = \frac{2}{11}$$

(calculer)

$$m = \frac{(y_2 - y_1)}{(x_2 - x_1)} = \frac{2 - 0}{5 - (-6)} = \frac{2}{11}$$

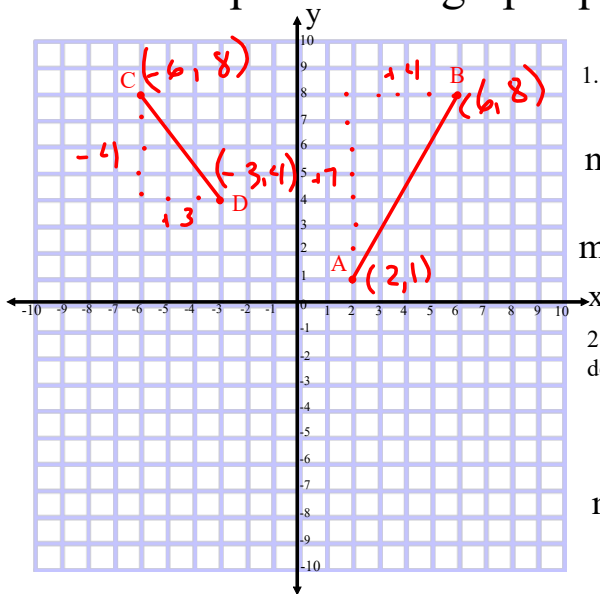
0,18

Les Pentés Négatives, Positives, Zero et Indéfinies



<https://www.youtube.com/watch?v=vQvIFx3-hrA>

Trouver la pente d'un graphique



1. Utilise l'élévation et la course (compter)

$$m_{AB} = \frac{\text{élévation}}{\text{course}} = \frac{7}{4}$$

$$m_{CD} = \frac{4}{3}$$

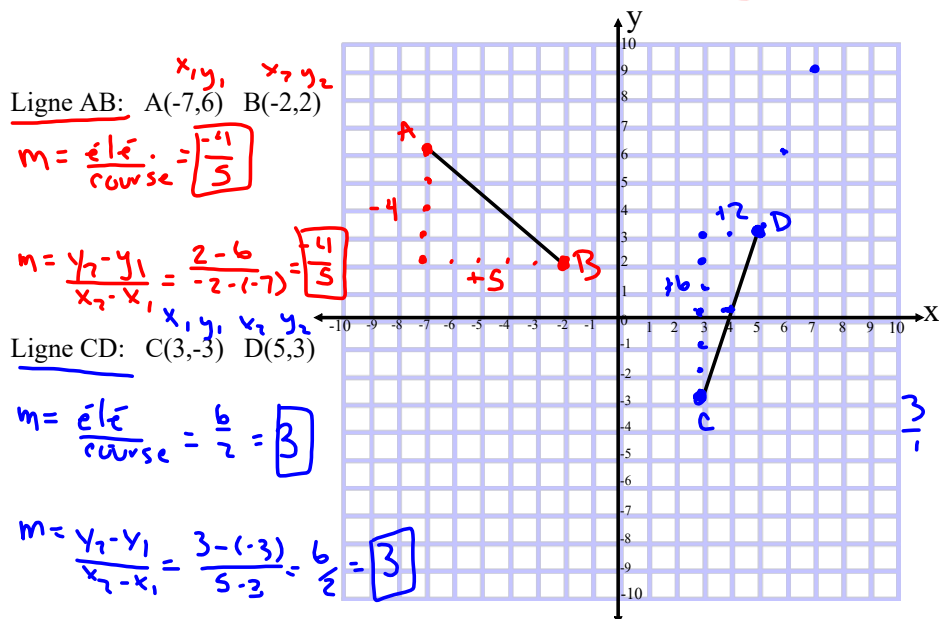
2. Utilise la formule de pente avec deux points (calculer)

$$m = \frac{(y_2 - y_1)}{(x_2 - x_1)}$$

$$m_{AB} = \frac{8 - 1}{6 - 2} = \frac{7}{4}$$

$$m_{CD} = \frac{4 - 8}{-3 - (-6)} = \frac{4}{3}$$

Placer les points sur le graphique et trouve la pente avec les 2 méthodes

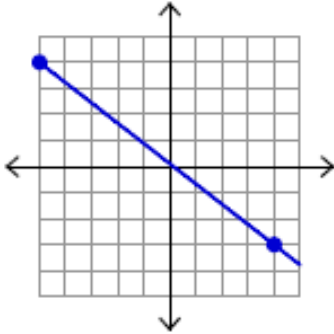


Trouver les pentes des lignes suivantes avec les 2 méthodes:

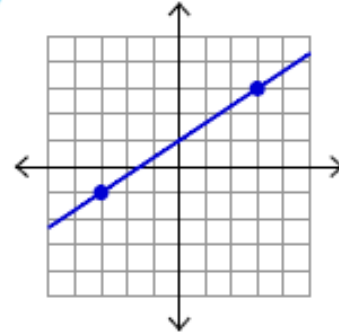
$$m = \frac{\text{l'élévation}}{\text{la course}} \text{ (compter)}$$

$$m = \frac{(y_2 - y_1)}{(x_2 - x_1)} \text{ (calculer)}$$

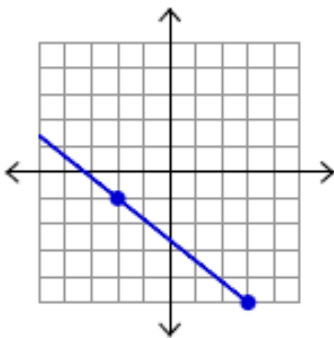
1)



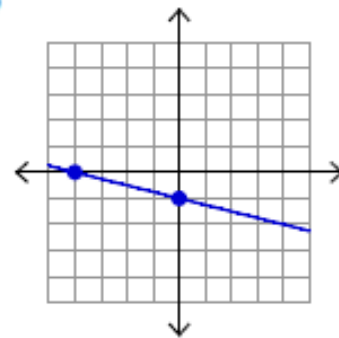
2)



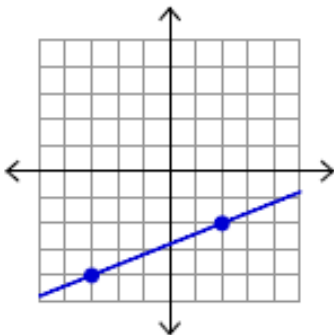
3)



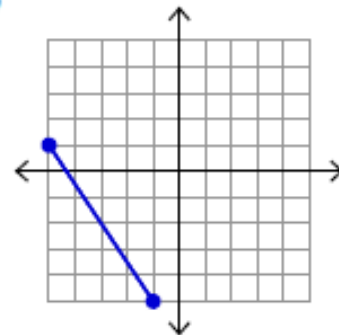
4)



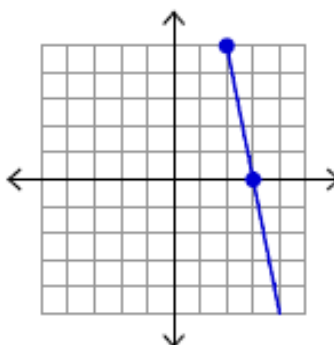
5)



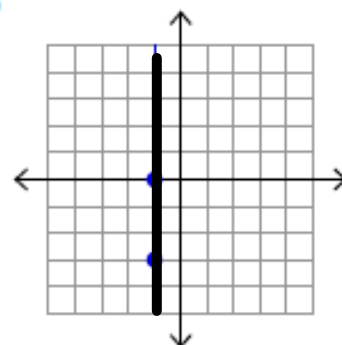
6)

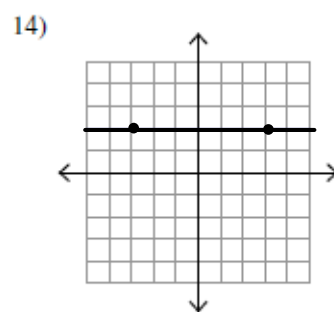
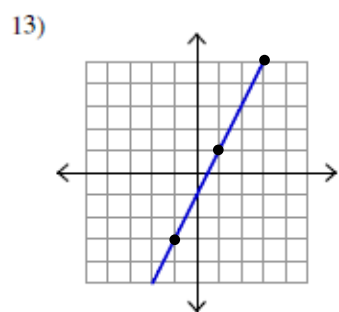
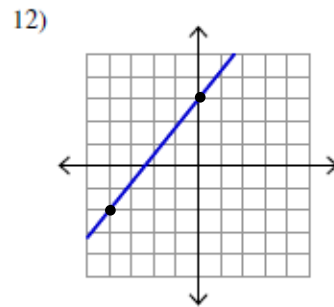
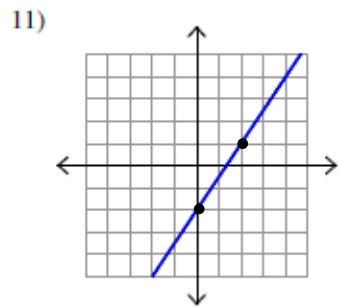
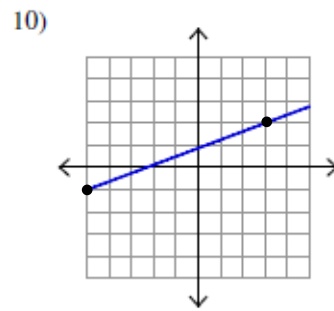
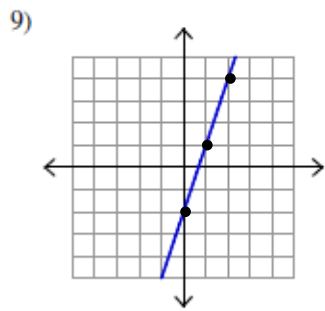


7)



8)





Trouver la pente du ligne avec chaque paire de points

1) $(19, -16), (-7, -15)$

2) $(1, -19), (-2, -7)$

3) $(-4, 7), (-6, -4)$

4) $(20, 8), (9, 16)$

5) $(17, -13), (17, 8)$

6) $(19, 3), (20, 3)$

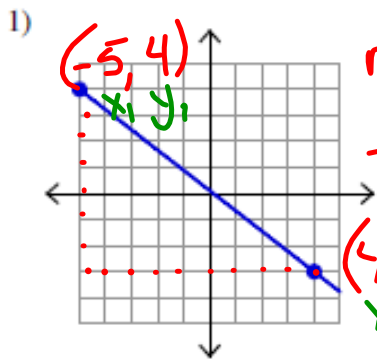
7) $(3, 0), (-11, -15)$

8) $(19, -2), (-11, 10)$

Trouver les pentes des lignes suivantes avec les 2 méthodes:

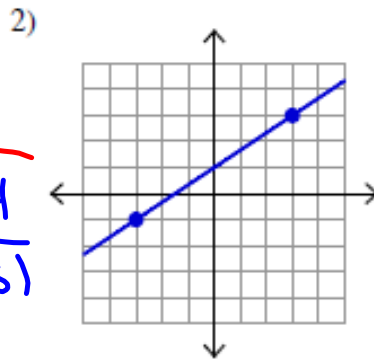
① $m = \frac{\text{l'élévation}}{\text{la course}}$ (compter)

② $m = \frac{(y_2 - y_1)}{(x_2 - x_1)}$ (calculer)

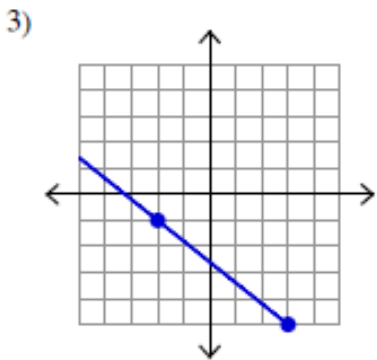


$m = -\frac{7}{9}$

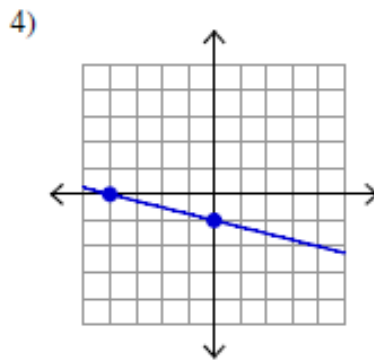
$m = \frac{-3 - 4}{4 - (-5)}$
 $= \frac{-7}{9}$



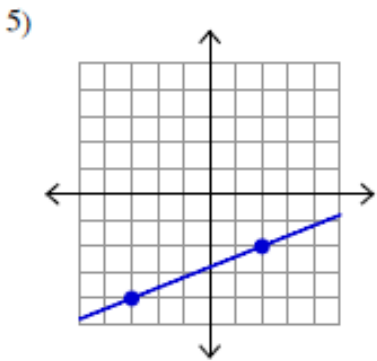
$\frac{2}{3}$



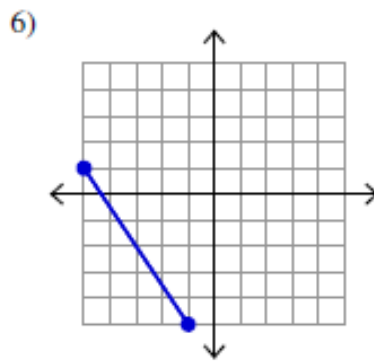
$-\frac{4}{5}$



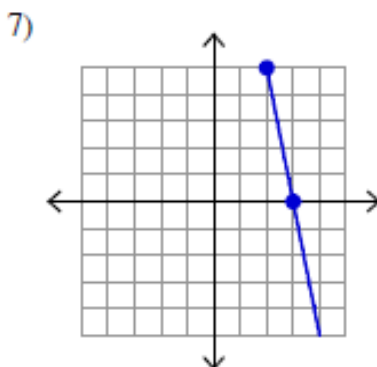
$-\frac{1}{4}$



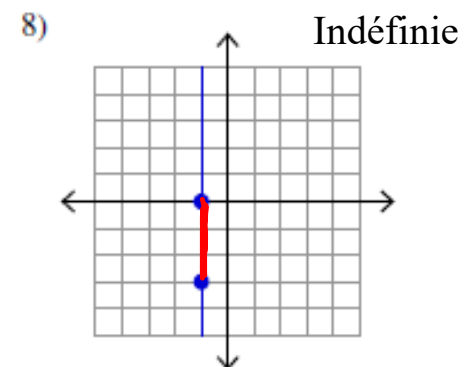
$\frac{2}{5}$

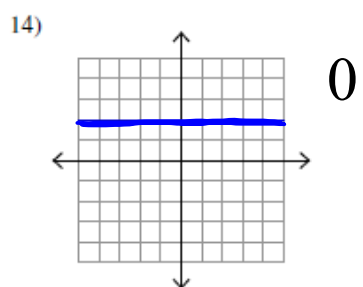
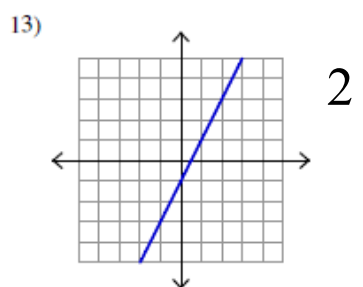
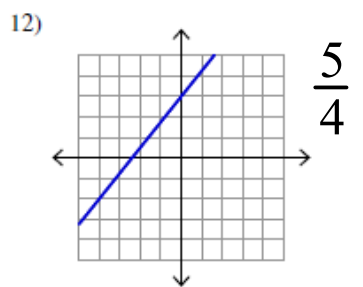
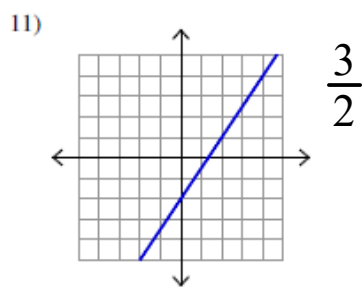
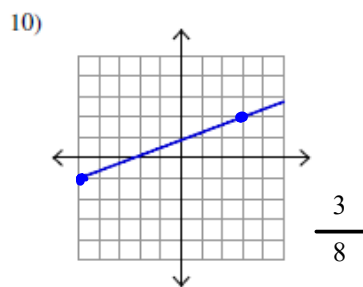
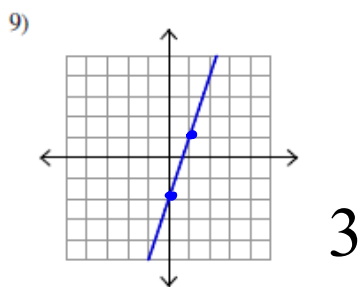


$-\frac{3}{2}$



-5





Trouver la pente du ligne avec chaque paire de points

1) $(19, -16), (-7, -15)$
 $\frac{y_2 - y_1}{x_2 - x_1} = \frac{-15 - (-16)}{-7 - 19} = \frac{-1}{-26} = \frac{1}{26}$

2) $(1, -19), (-2, -7)$
 $\frac{-7 - (-19)}{-2 - 1} = \frac{12}{-3} = -4$

3) $(-4, 7), (-6, -4)$
 $\frac{-4 - 7}{-6 - (-4)} = \frac{-11}{-2} = \frac{11}{2}$

4) $(20, 8), (9, 16)$
 $\frac{16 - 8}{9 - 20} = \frac{8}{-11} = -\frac{8}{11}$

5) $(17, -13), (17, 8)$
 indéfinie

6) $(19, 3), (20, 3)$
 0

7) $(3, 0), (-11, -15)$
 $\frac{-15 - 0}{-11 - 3} = \frac{-15}{-14} = \frac{15}{14}$

8) $(19, -2), (-11, 10)$
 $\frac{10 - (-2)}{-11 - 19} = \frac{12}{-30} = -\frac{2}{5}$

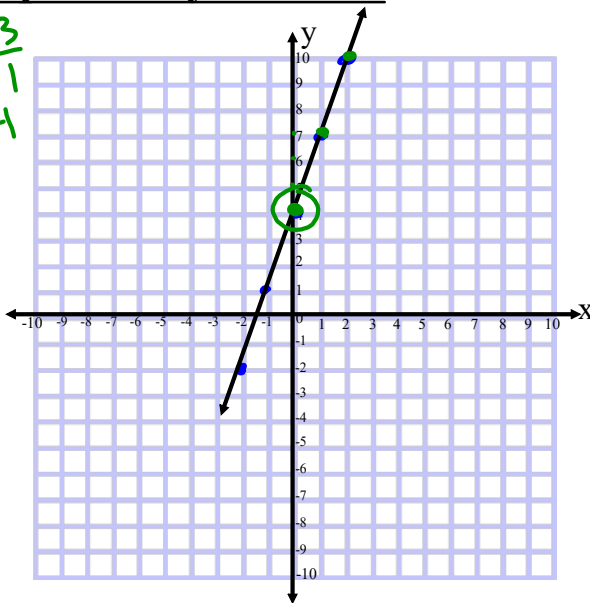
Trouver la pente de l'équation: $y = mx + b$

$$y = \underline{3x} + \underline{4}$$

$m = 3$
 $b = 4$

table de valeurs:

X	y
-2	-2
-1	1
0	4
1	7
2	10



C'est quoi le lien entre qu'est-ce que tu vois sur le graphique est ce que tu vois dans l'équation?

$$y = m x + b$$

↑
↑

pente
l'ordonnée à l'origine

(ou la ligne touche l'axe y)

Si l'équation n'est pas dans cette forme, on ne peut pas déterminer la pente ou l'ordonnée à l'origine...

jusqu'à on l'a **réarranger!**

Exemple:

a) $y - 6 = 3x$

$$y = 3x + 6$$

$m = 3$ $b = 6$

b) $3y - 9 = x$

$$\frac{3y}{3} = \frac{x}{3} + \frac{9}{3}$$

$$y = \frac{1}{3}x + 3$$

$m = \frac{1}{3}$ $b = 3$

Déterminer la pente et l'ordonnée à l'origine:

a) $y = 6x - 8$

$m = 6$ $b = -8$

b) $y = 10 + \frac{2}{3}x$

c) $y = x - 1$

d) $\frac{2y}{2} = \frac{4x}{2} + \frac{10}{2}$

$$y = 2x + 5$$

$m = 2$

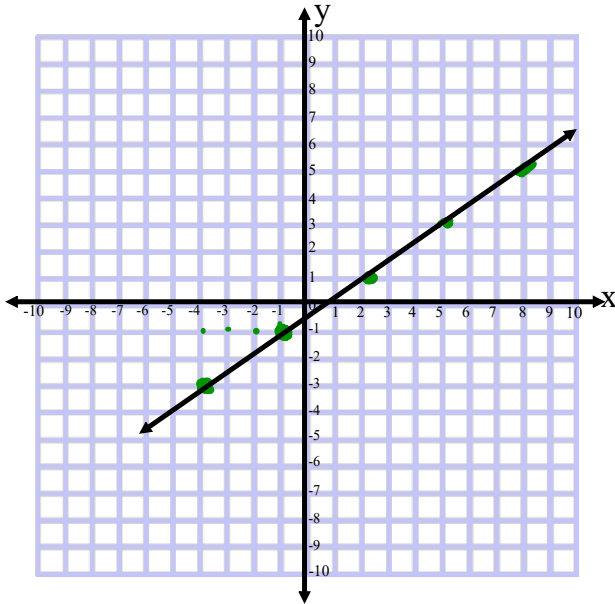
e) $2 = 6x - 2y$

$b = -5$

Tracer le graphique avec la pente et un point

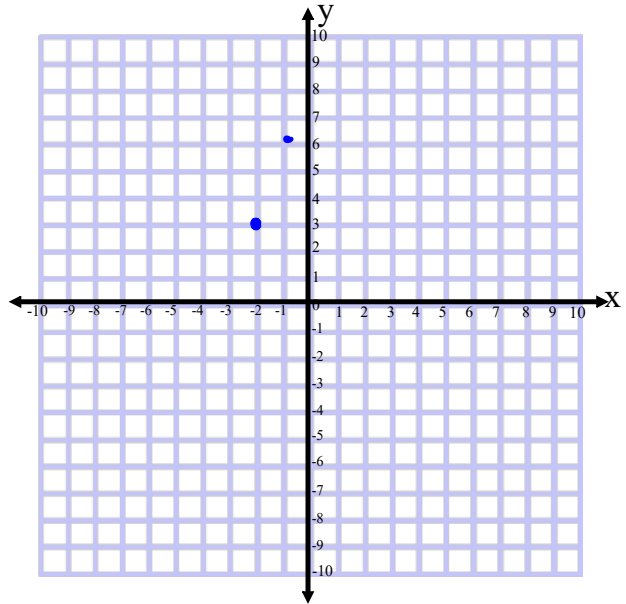
$m = \frac{2}{3}$ et passe par le point $(-4, -3)$

Handwritten notes: "pente" (slope) and "point" (point) in green, with a green box around the fraction $\frac{2}{3}$.



$m = 3$ et passe par le point $(-2, 3)$

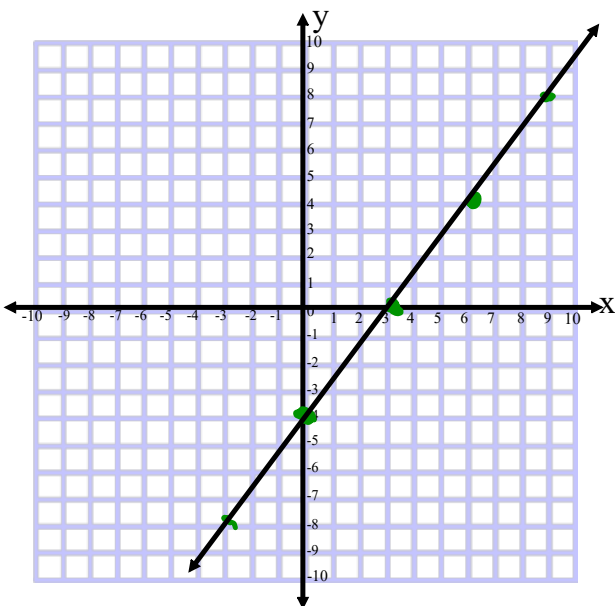
Handwritten note: "point" in blue, with a blue box around the slope value 3.



Tracer le graphique avec l'équation

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

Handwritten notes: "m = 4/3" and "b = -4" in green, with a green circle around the -4 in the equation.



$y = -6x + 4$

