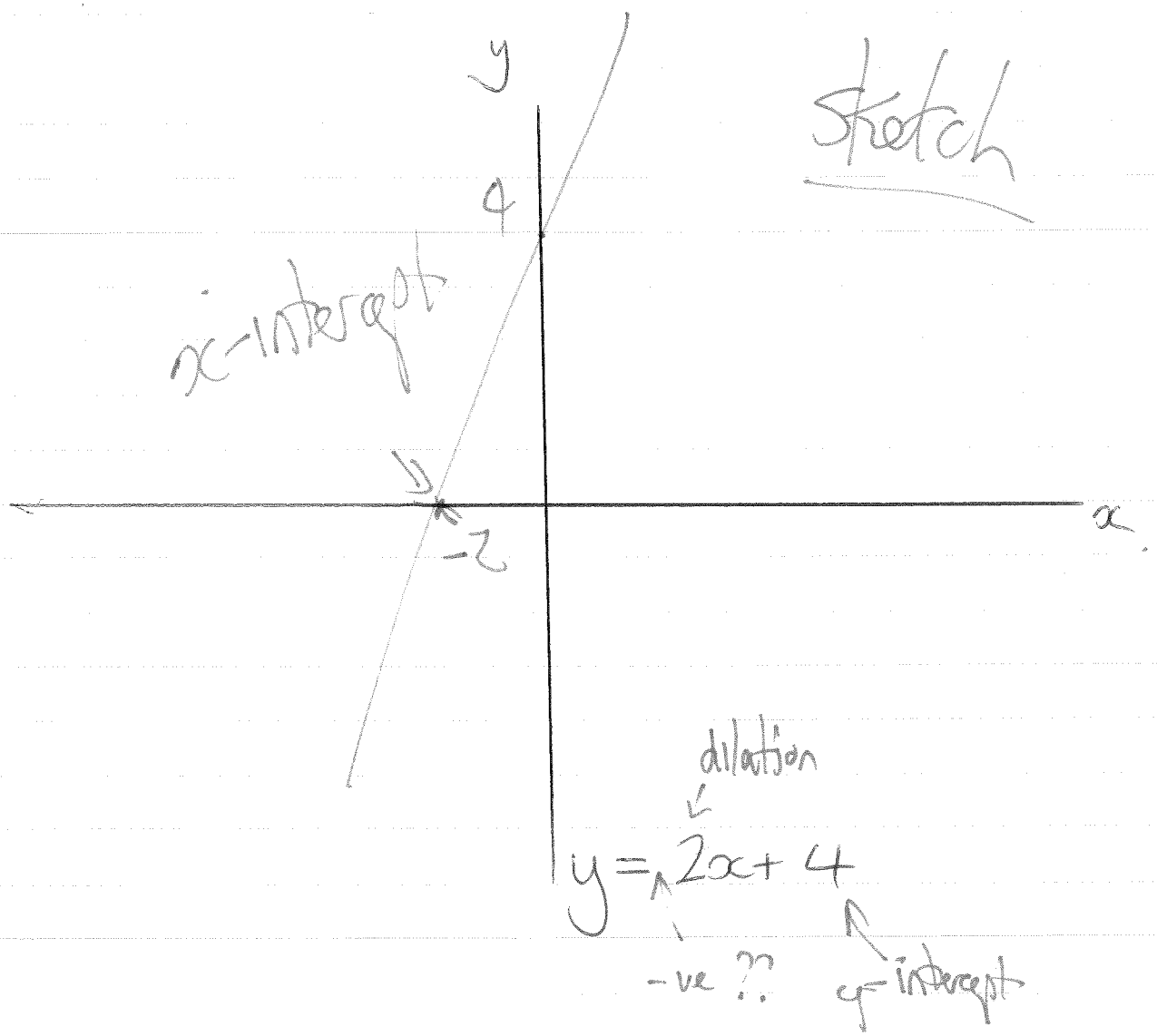
REFLECTION

DILATION

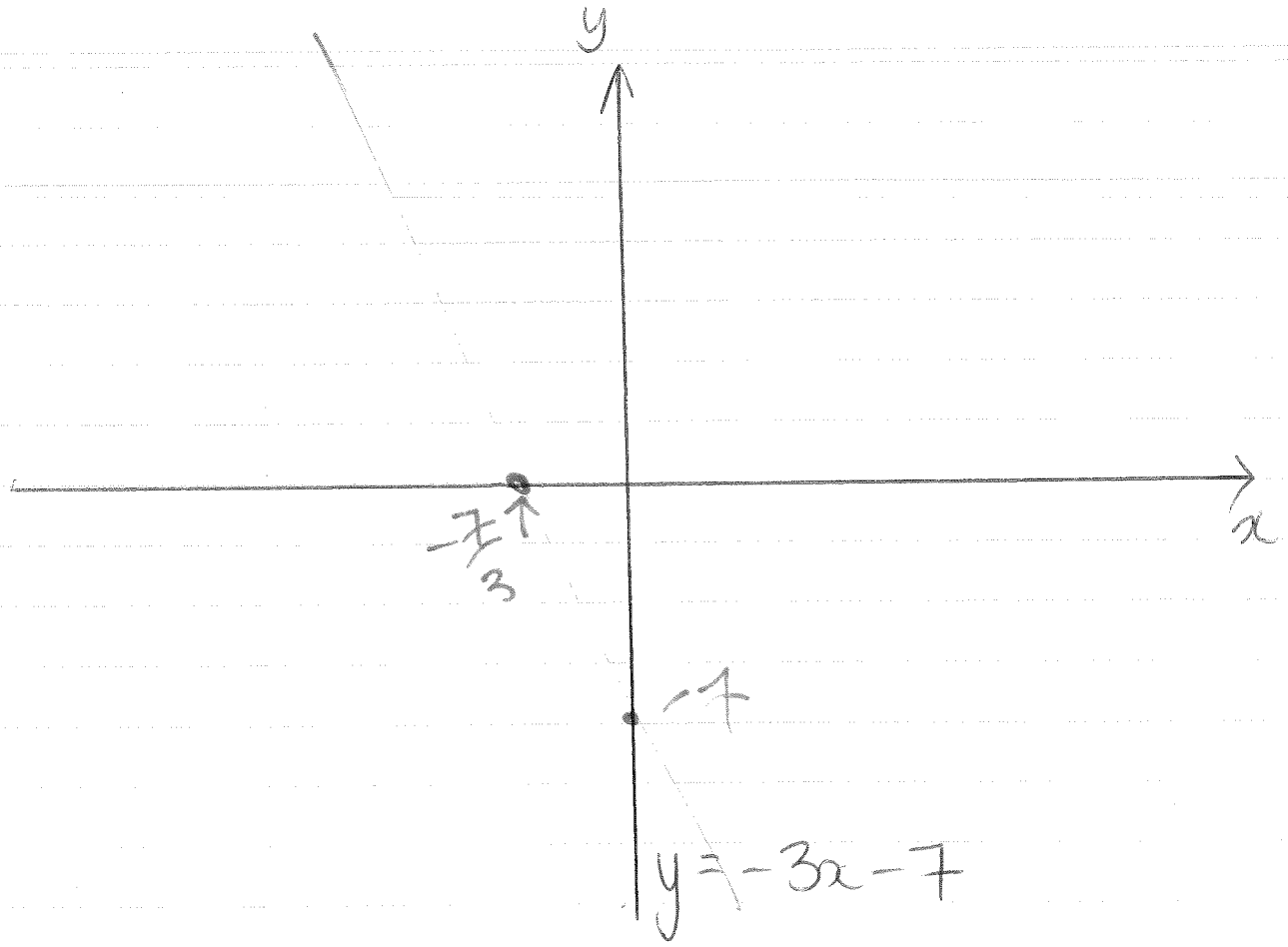
VERTICAL TRANSLATION.

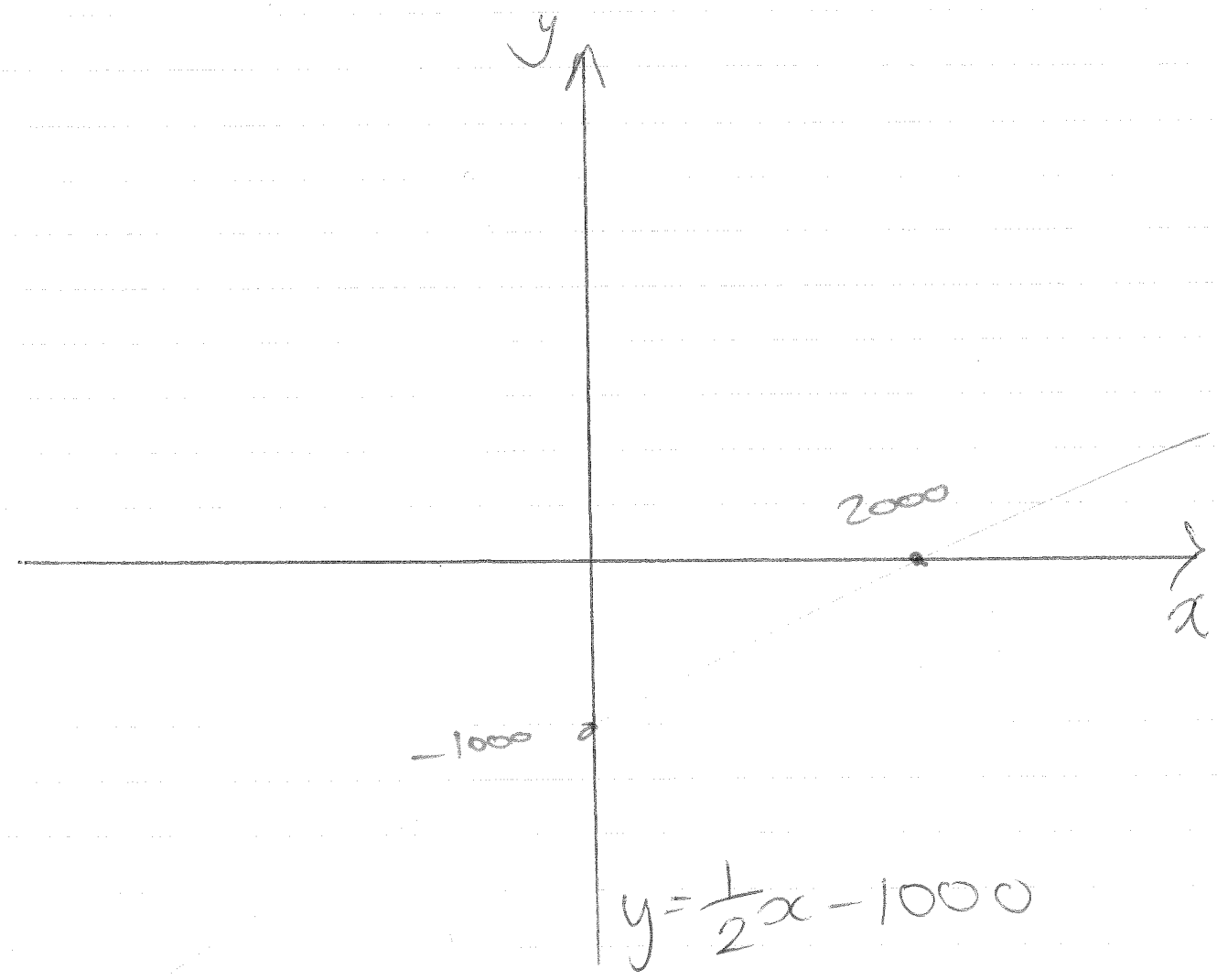
Sketching

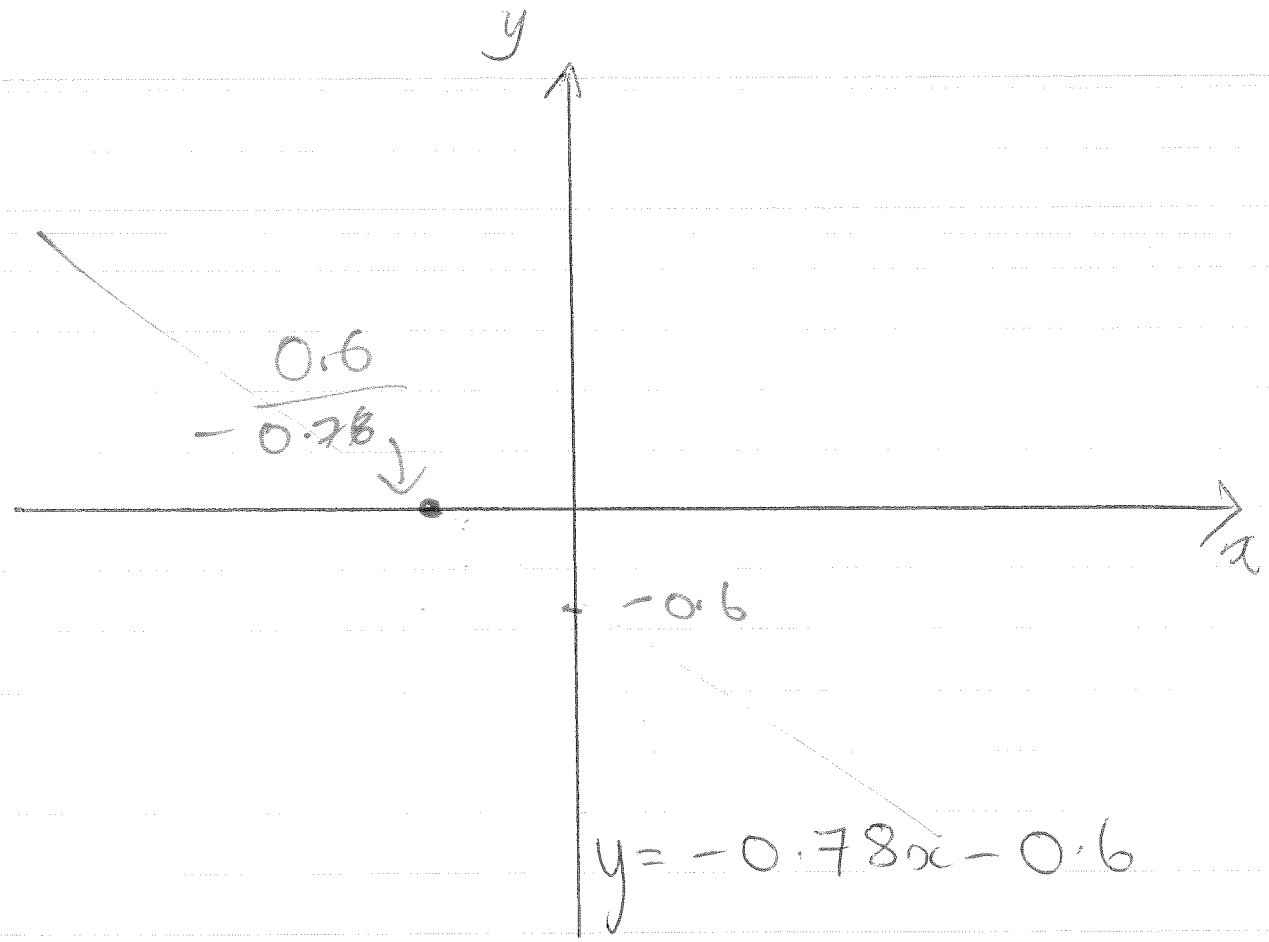
$$y = mx + b$$

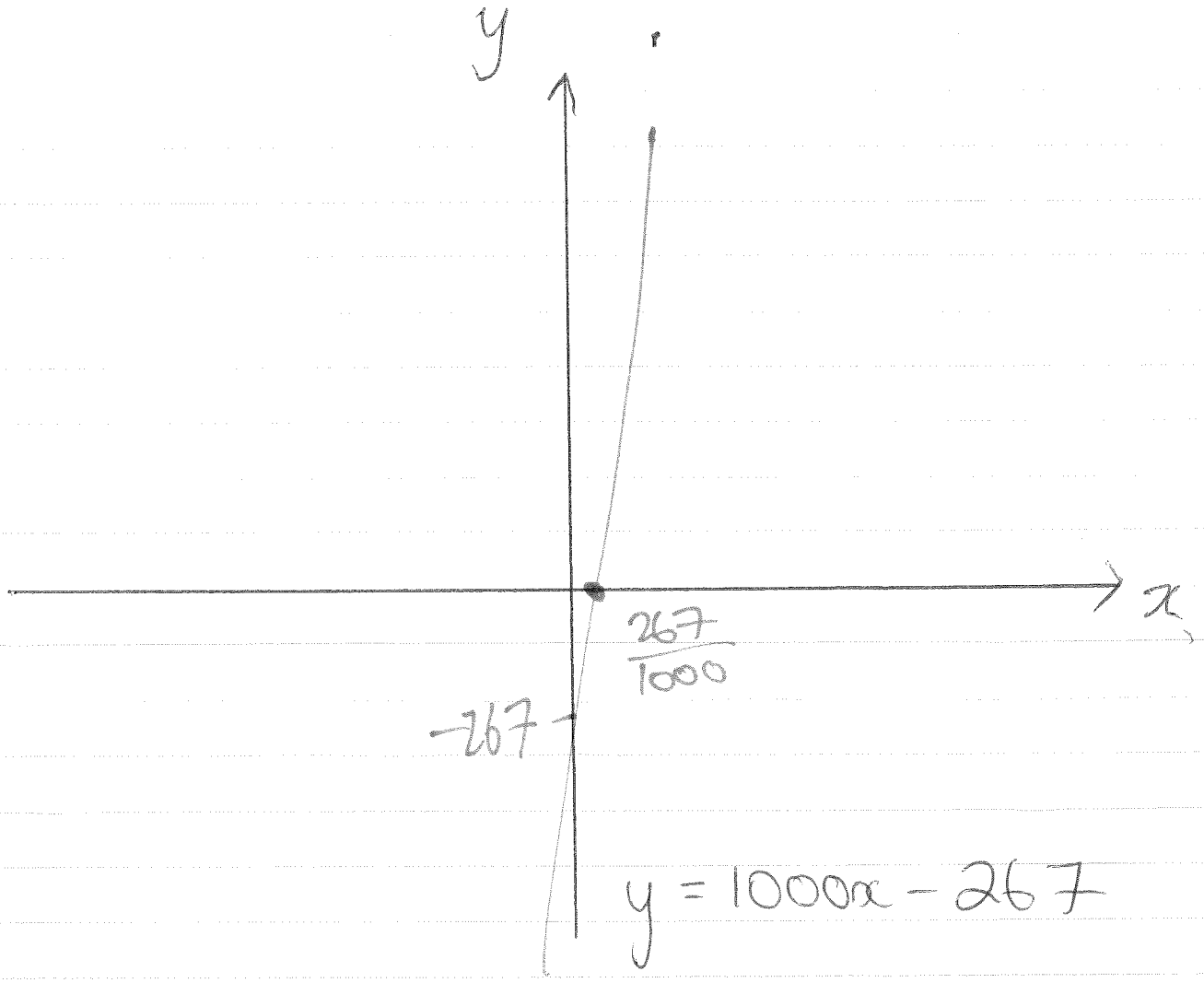


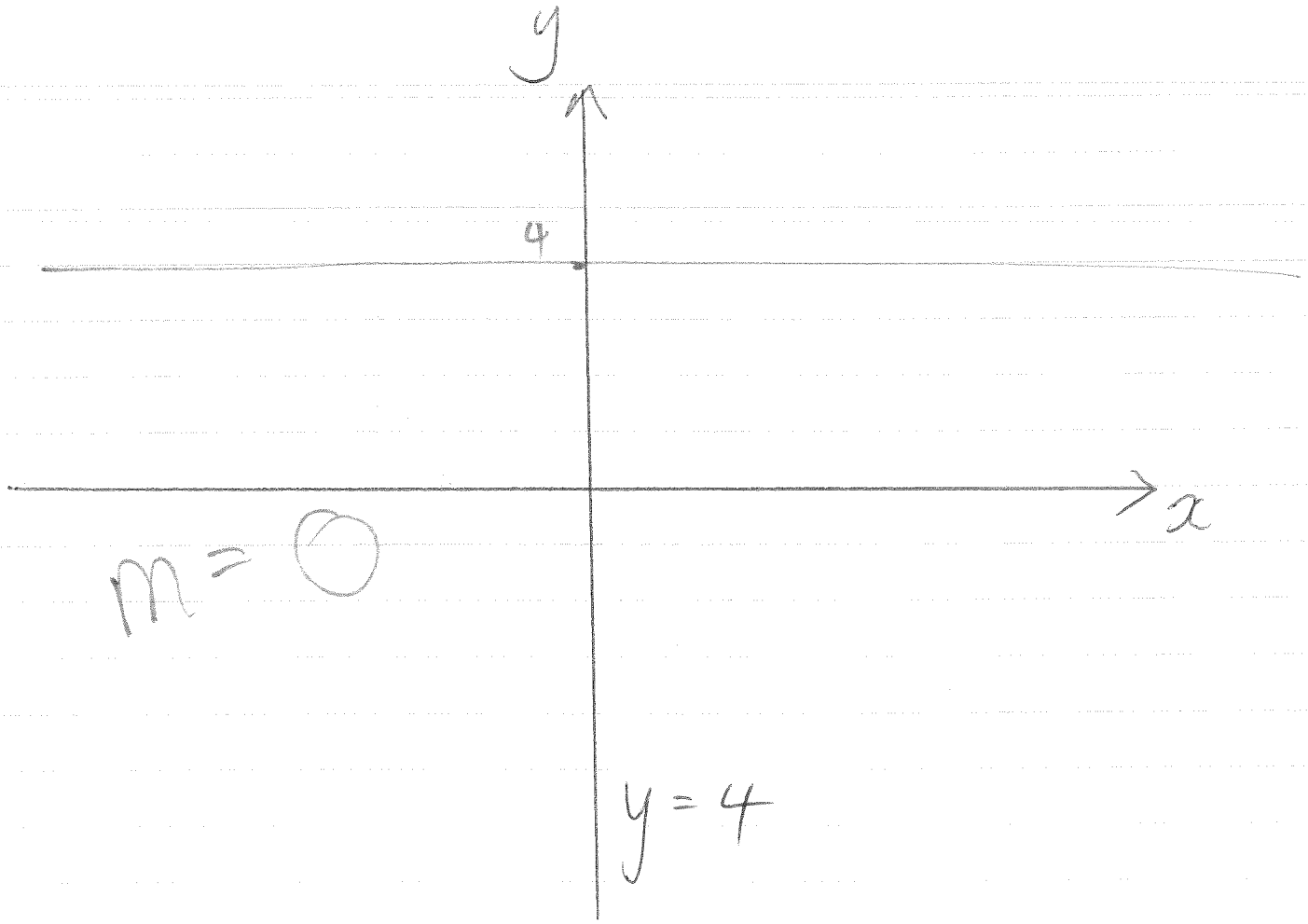
Sketch

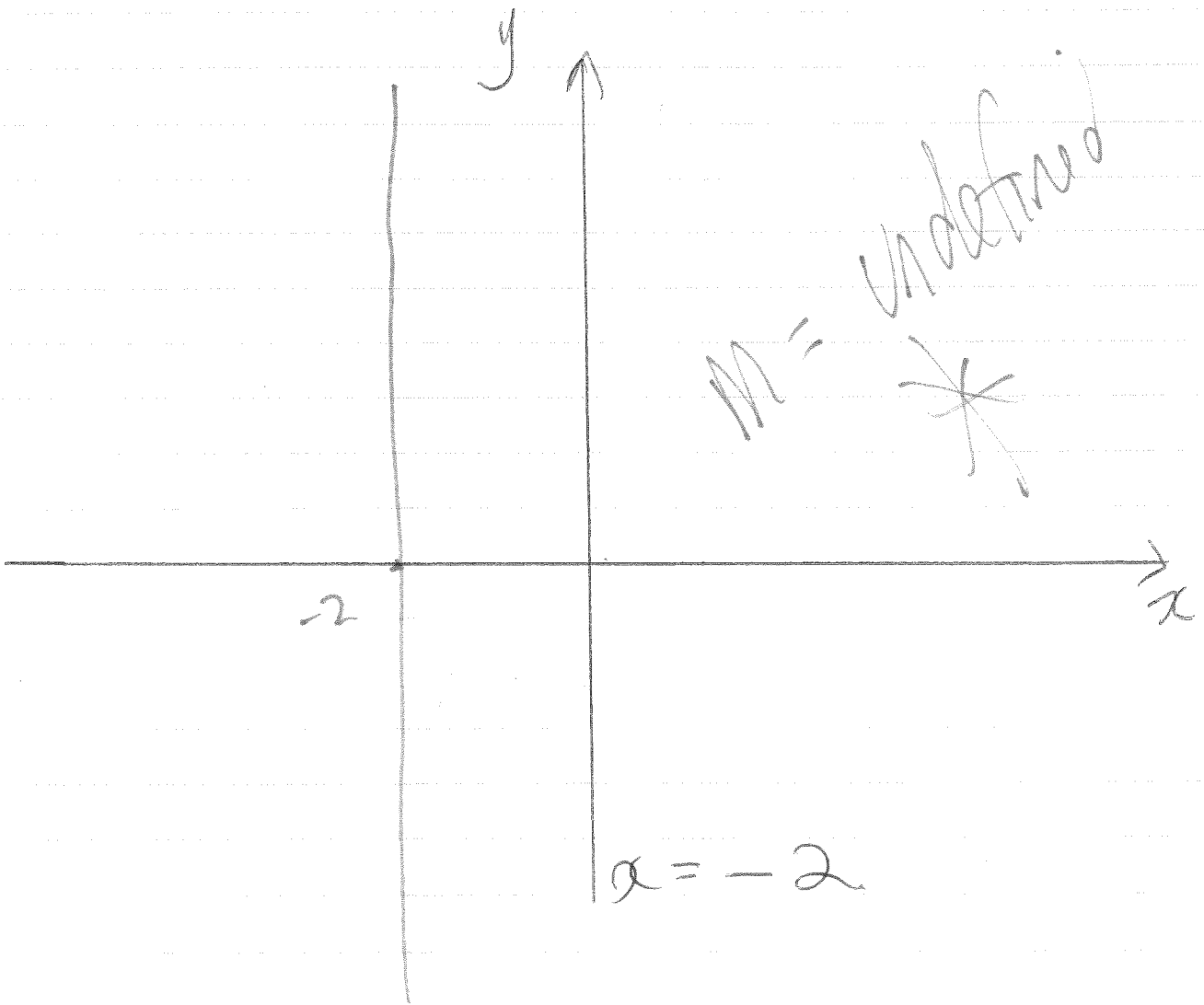

y
x
$-\frac{7}{3}$
-7
$y = -3x - 7$


y
x
2000
-1000
$y = \frac{1}{2}x - 1000$


y
x
0.6
-0.78
-0.6
y = -0.78x - 0.6

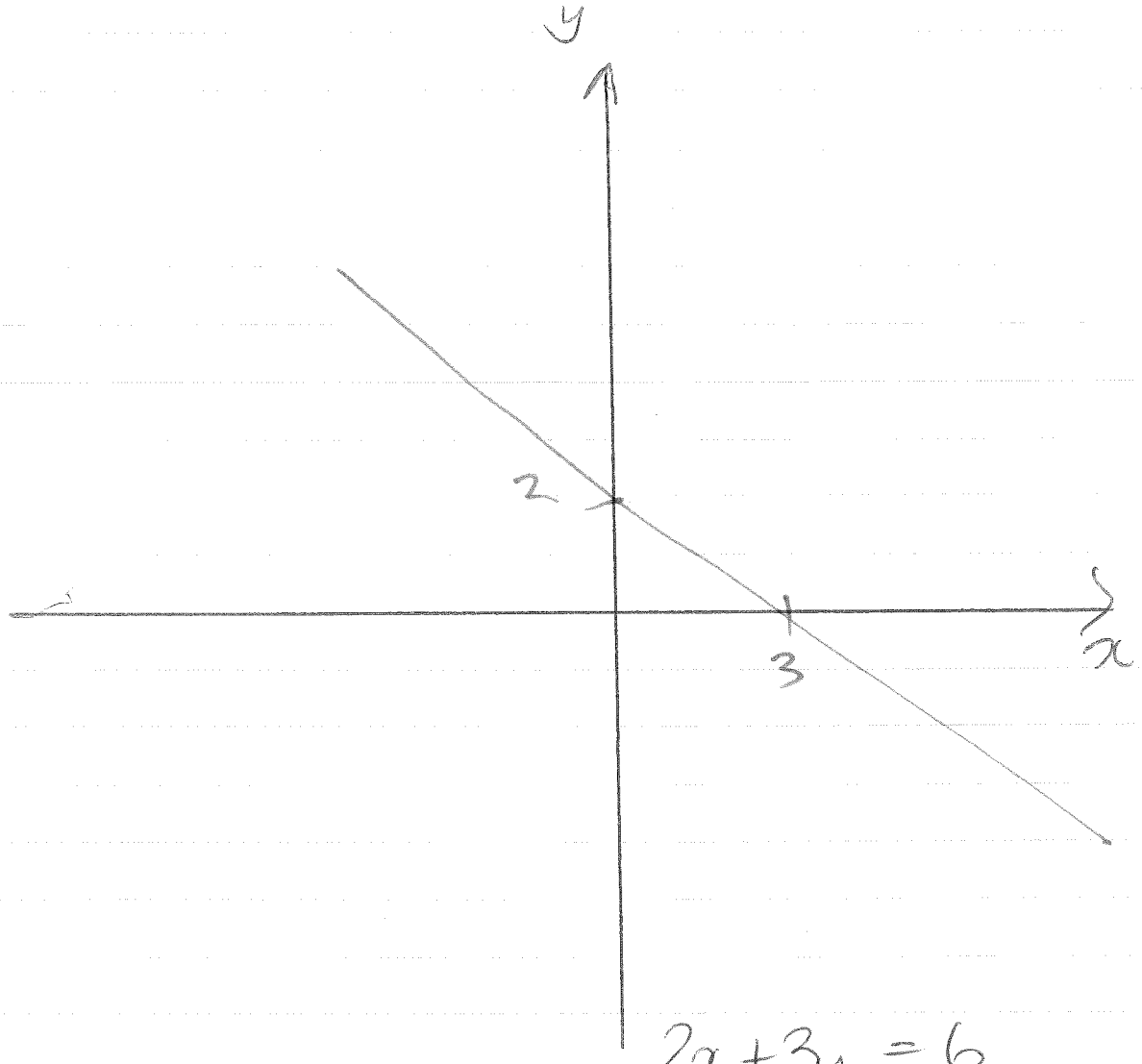

y
x
267/1000
-267
y = 1000x - 267


y
4
x
m = 0
y = 4

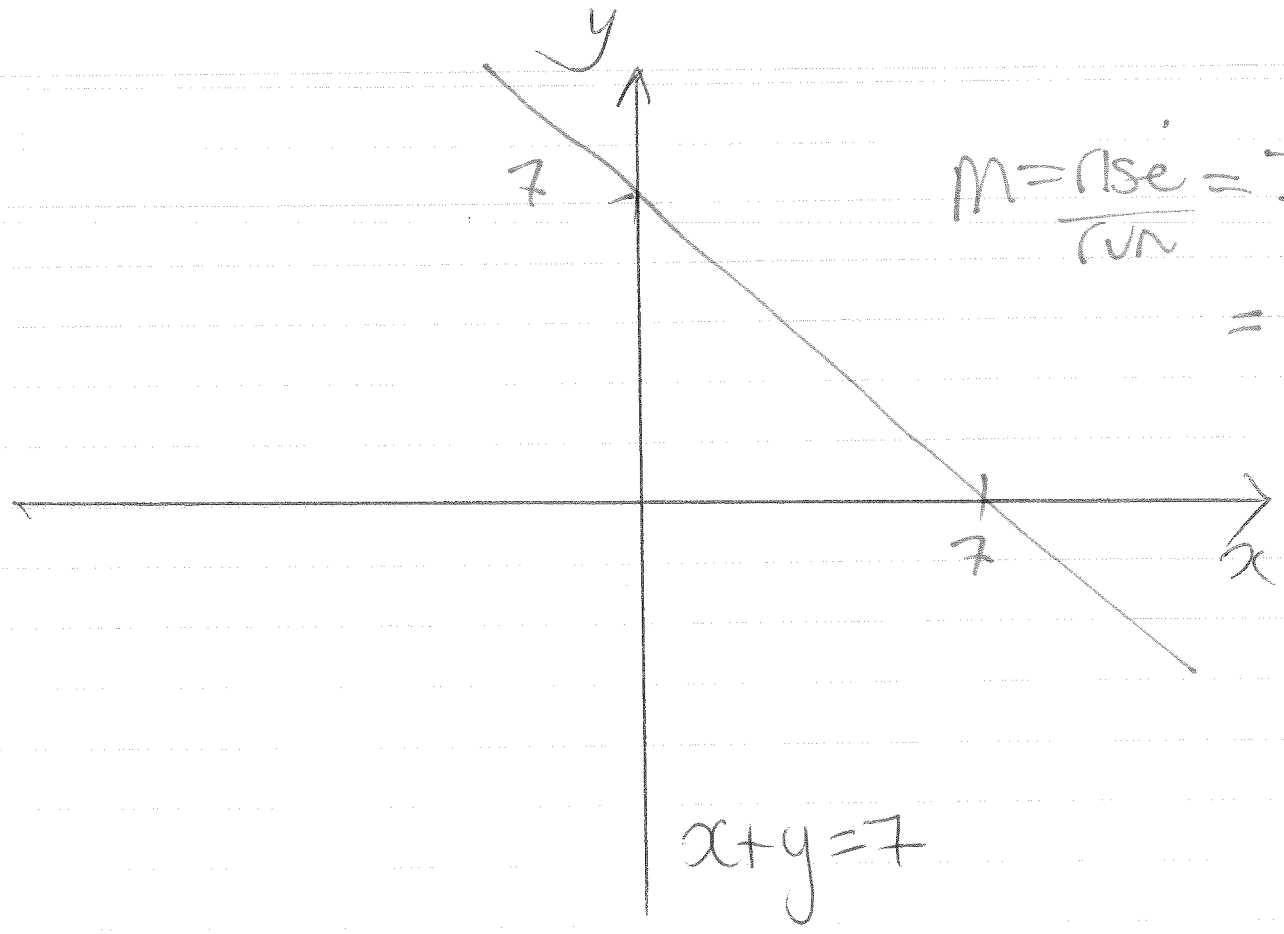

y
m = undefined
-2
x
x = -2

Sketching

$ax + by = c$

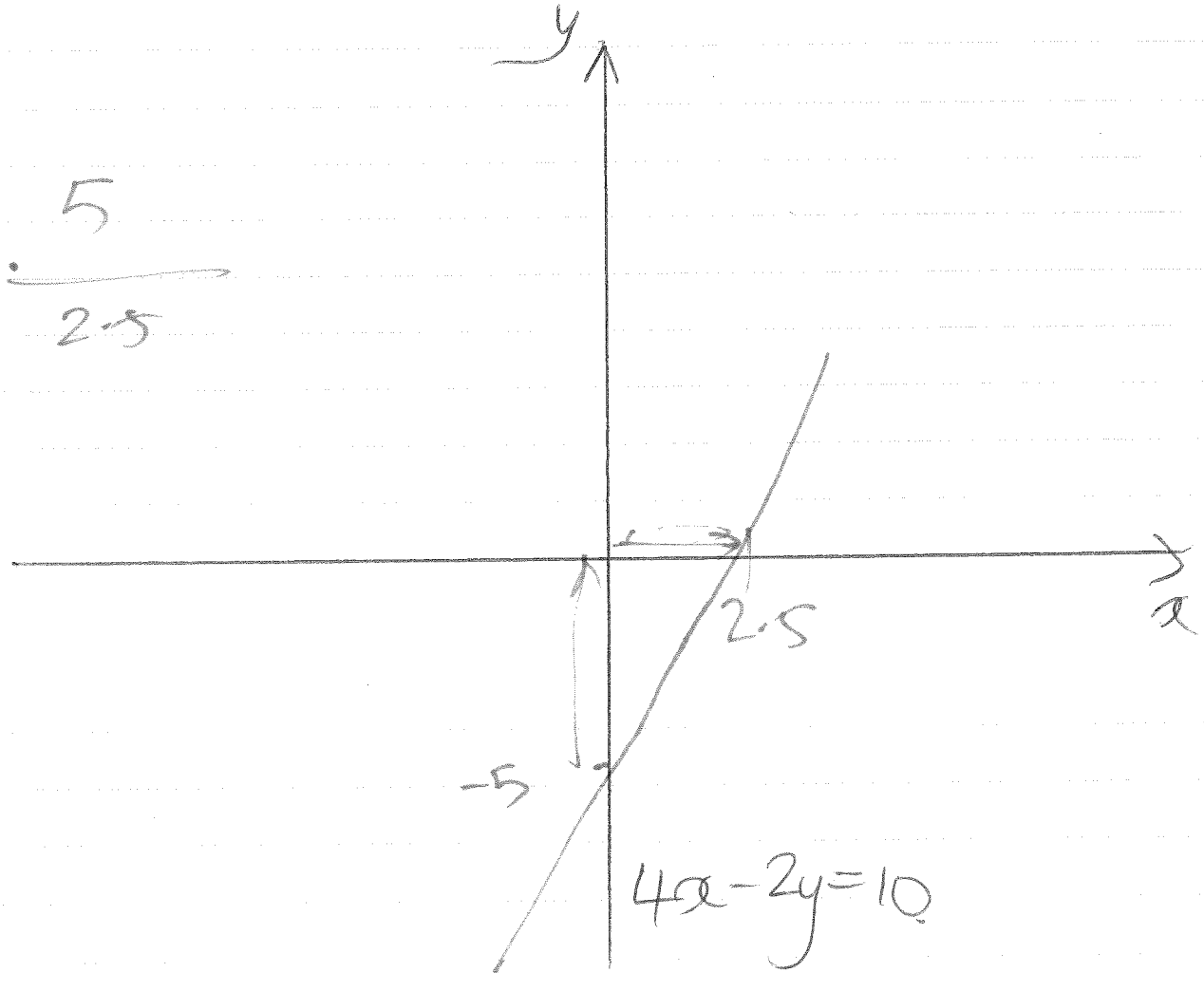


$2x + 3y = 6$



$$m = \frac{\text{rise}}{\text{run}} = \frac{-7}{7}$$

$$= -1$$



Gradient

$$\frac{\text{rise}}{\text{run}}$$

for every step - how far up or down.

$$\frac{y_2 - y_1}{x_2 - x_1}$$

Getting equations

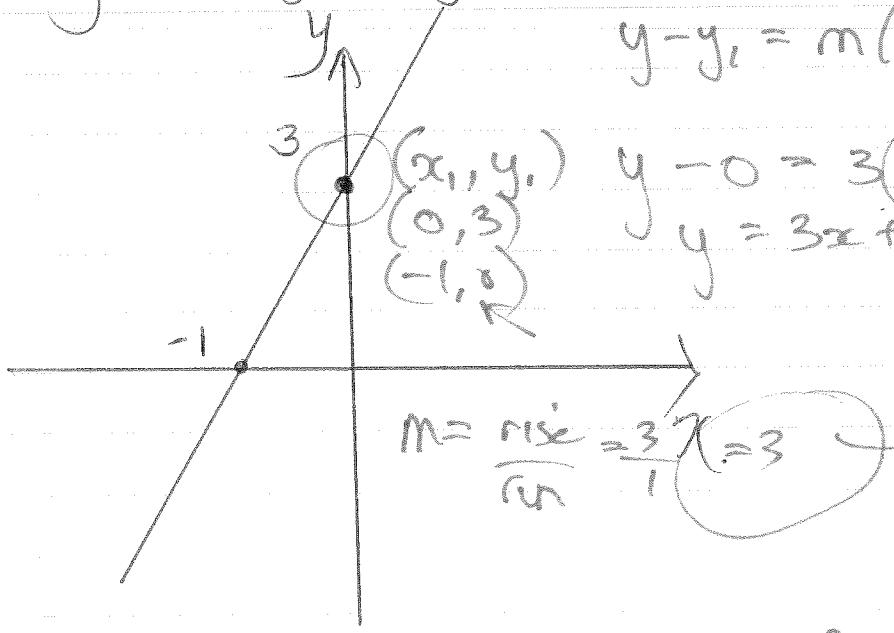
gradient intercept

$$y = mx + b$$

point gradient

$$y - y_1 = m(x - x_1)$$

eg. getting equations



$y - y_1 = m(x - x_1)$

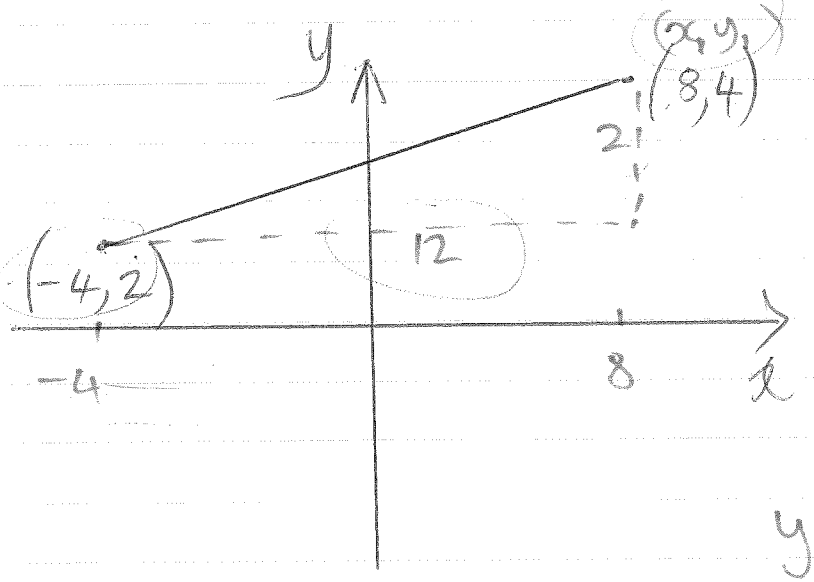
$y - 0 = 3(x - -1)$

$y = 3x + 3$

$y = mx + b$

$y = 3x + 3$

$m = \frac{\text{rise}}{\text{run}} = \frac{3}{1} = 3$



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

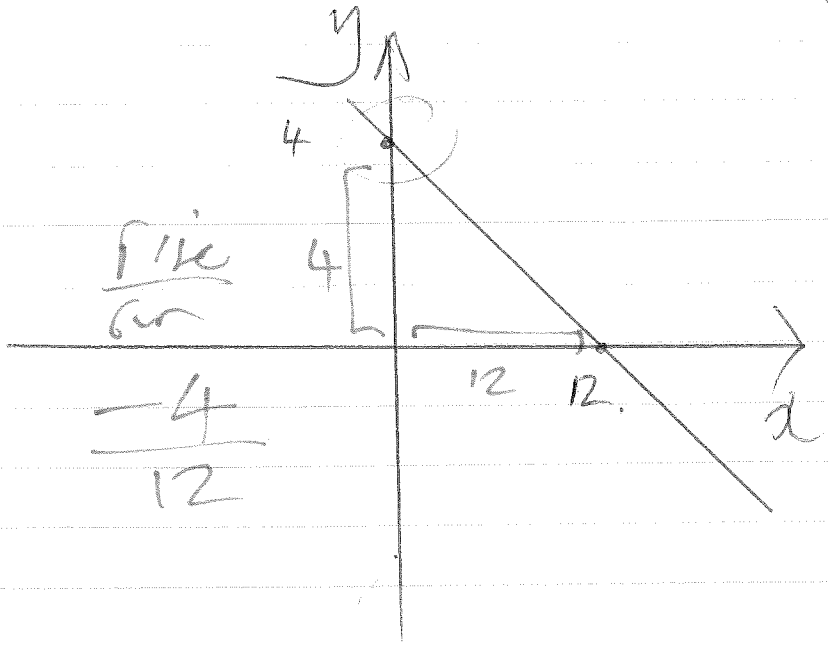
$= \frac{2}{12}$

$= \frac{1}{6}$

$y - y_1 = m(x - x_1)$

$y - 4 = \frac{1}{6}(x - 8)$

$y = \frac{1}{6}x - \frac{8}{6} + 4$



$\frac{\text{rise}}{\text{run}}$

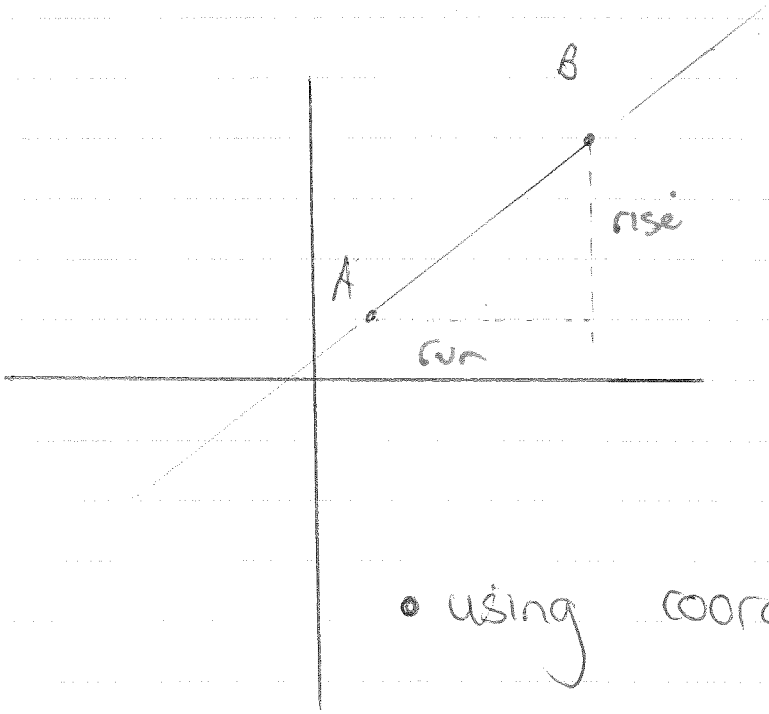
$\frac{-4}{12}$

$y = mx + b$

$y = -\frac{1}{3}x + 4$

Specialist

Distance formula



- using coordinates

Use pythag.....

$$c^2 = a^2 + b^2$$

try not to remember as crazy rule instead know its pythag

$$D = \sqrt{(y_2 - y_1)^2 + (x_2 - x_1)^2}$$

$(y_2 - y_1)^2$ ← rise^2 $\quad$ $(x_2 - x_1)^2$ ← run^2

eg $(1,6)$ to $(7,18)$ $\rightarrow$ $m=2$.

x_1, y_1 $\quad$ x_2, y_2

① draw diagram

② get ⌙ triangle.

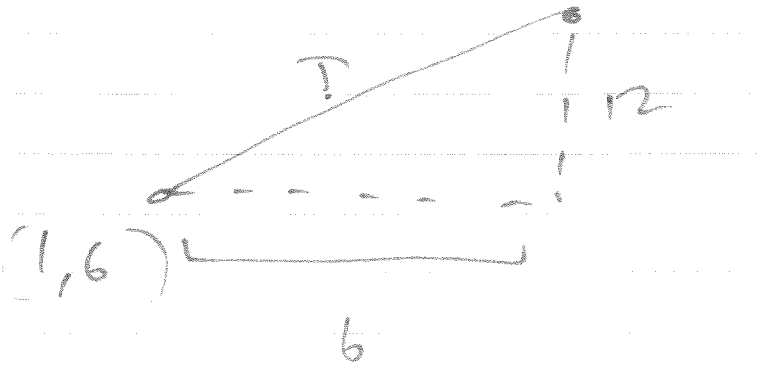
③ pythag.....

$$D=\sqrt{(y_2-y_1)^2+(x_2-x_1)^2}$$

OR.

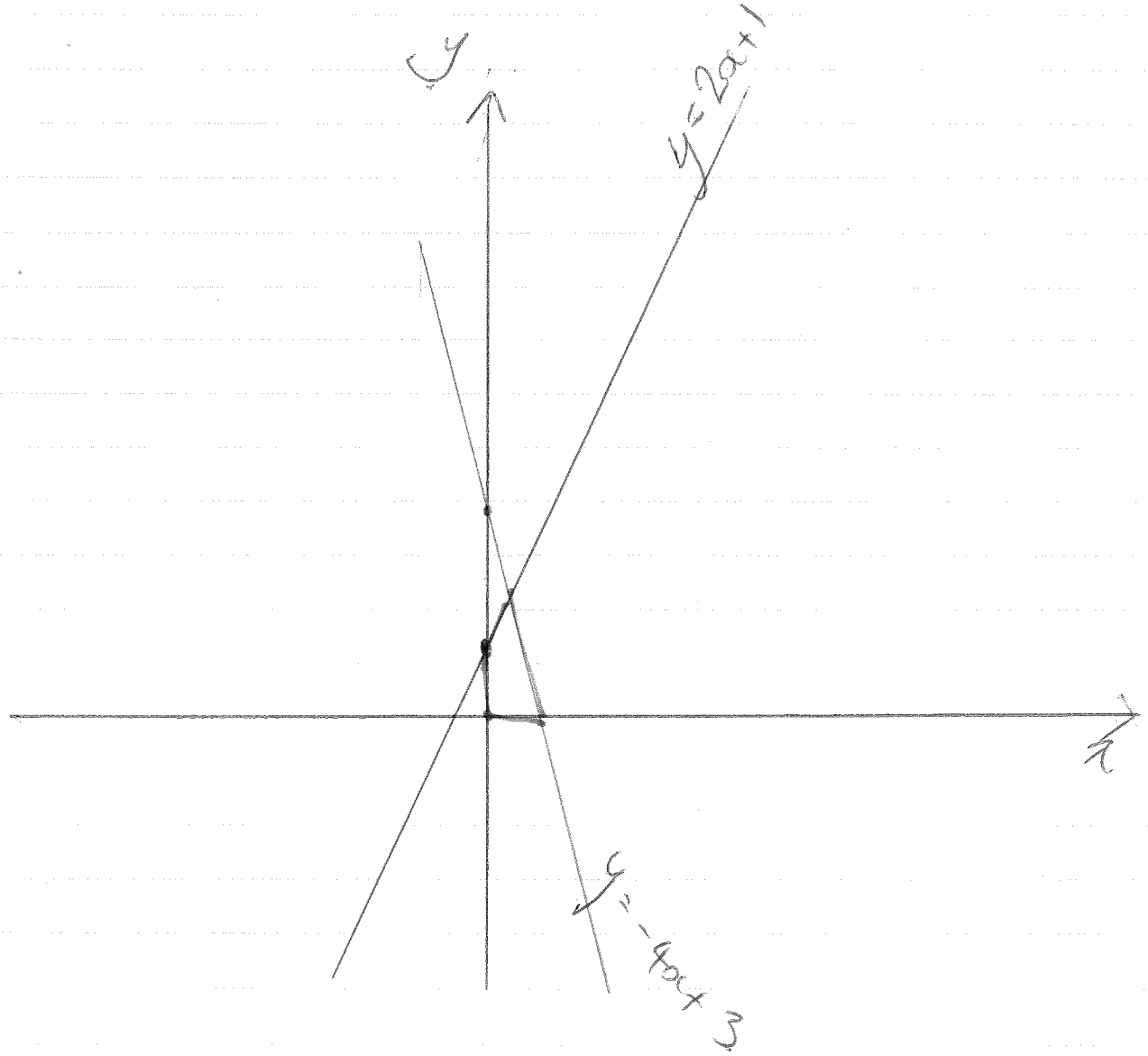
$$D=\sqrt{(18-6)^2+(7-1)^2}$$

$$D=\sqrt{12^2+6^2}$$



$$D^2=6^2+12^2$$

Challenge

SUPER NINJA STICKER ON OFFER!

Find perimeter of quadrilateral formed by intersection of x-axis, y-axis, $y = 2x + 1$ and $y = -4x + 3$.