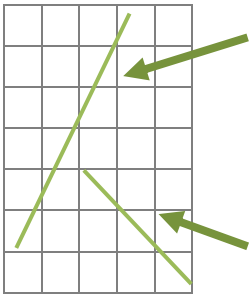
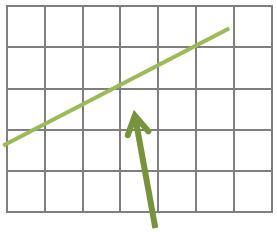
Gradient	The gradient of a line tells you how steep it is.	The higher the gradient the steeper the line



This line has a gradient of 2 as it goes up 2 squares for every **one square along**.

A line that goes down (leans backwards) has a negative gradient. This line has a gradient of -1.



This line has a gradient of ½ as it goes up half a square for every **one** along.

1. Find the gradients of each of these lines.

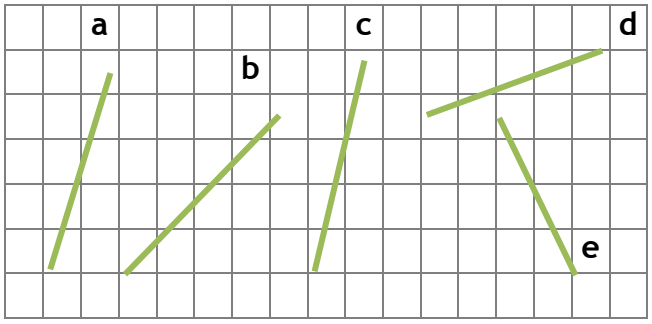
Gradient of **a** =

Gradient of **b** =

Gradient of **c** =

Gradient of **d** =

Gradient of **e** =



2. Draw a line (at least 2 cm long) on the grid that have the following gradients:
Label each line.

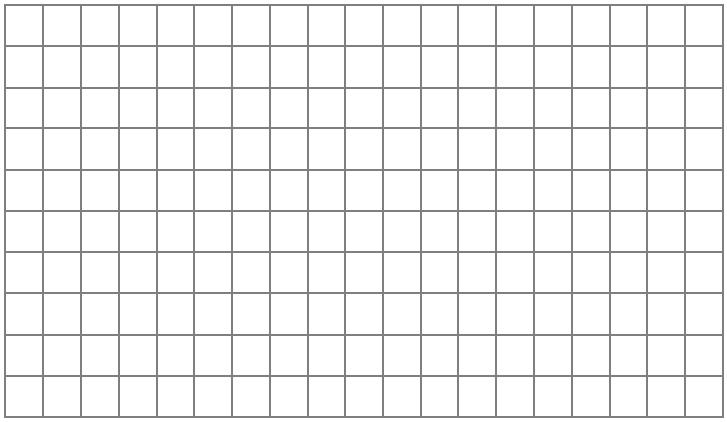
a. Gradient of 2

b. Gradient of 4

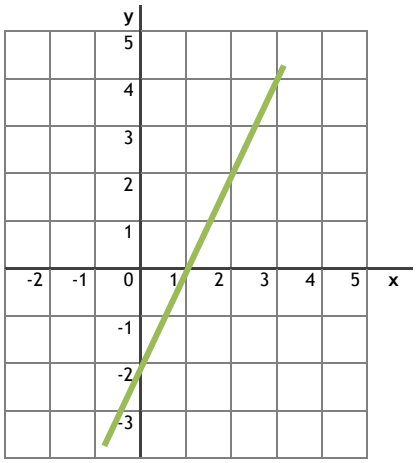
c. Gradient of ¼

d. Gradient of -3

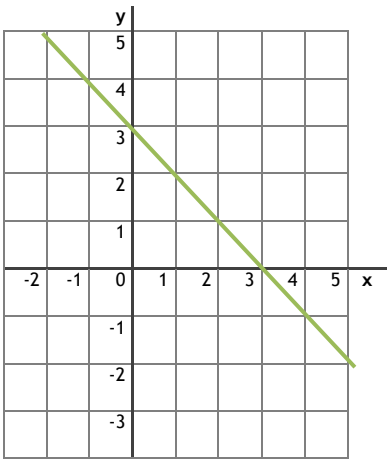
e. Gradient of -½



Y intercept	The y intercept of a line is where the line cuts (crosses) the y-axis.

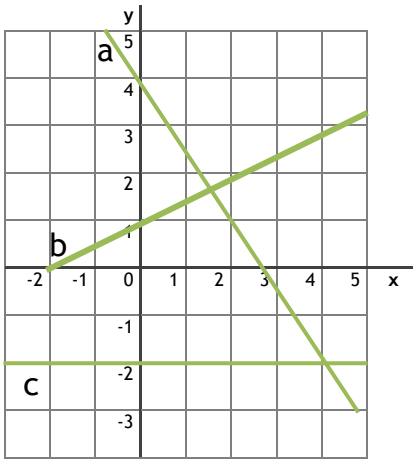


The y intercept of this graph is -2.



The y intercept of this graph is 3.

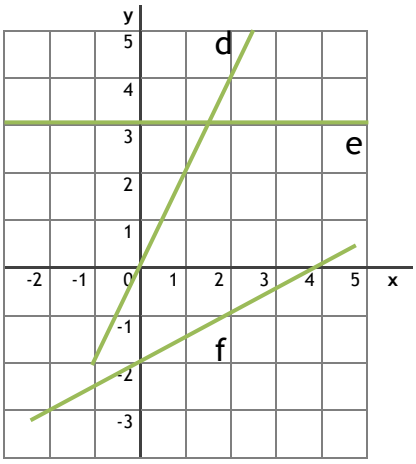
3. Write down the y intercept of the following lines.



y int of **a** =

y int of **b** =

y int of **c** =

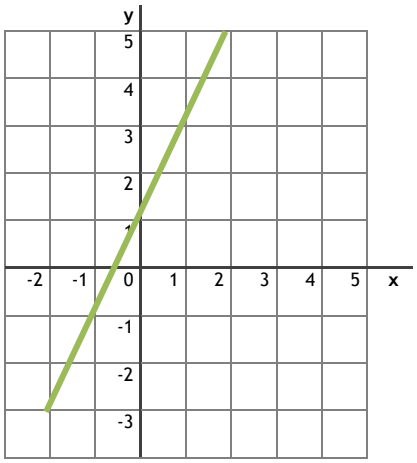


y int of **d** =

y int of **e** =

y int of **f** =

Gradient and Y intercept



This is the graph of $y = 2x + 1$

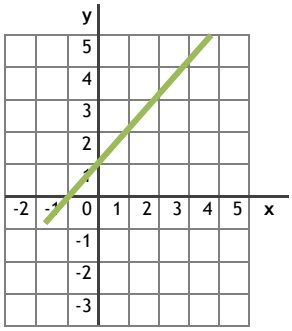
The gradient of this line is **2**.

The y intercept of this line is 1.

So the number in front of x in the equation tells you the gradient of the line.

The number at the end of the equation tells you the y intercept.

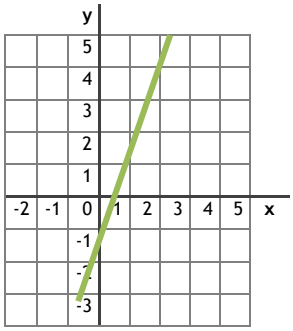
4. Find the gradient and y intercept of the line. Use these to write down the equation of the line.



Gradient =

y int =

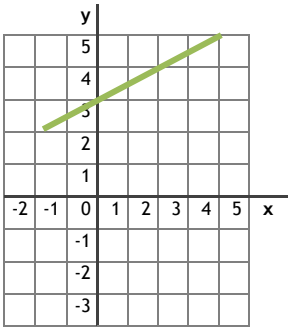
y = ___ x + ___



Gradient =

y int =

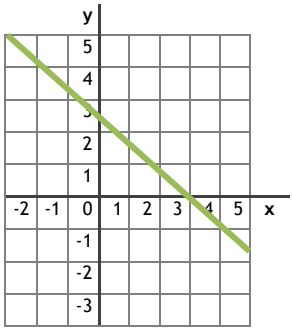
y = ___ x + ____



Gradient =

y int =

y = ___ x + ___

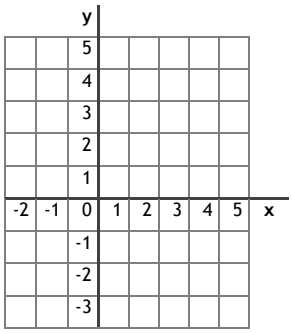


Gradient =

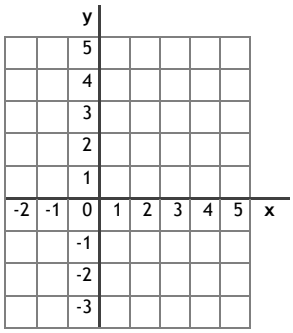
y int =

y = ___ x + ___

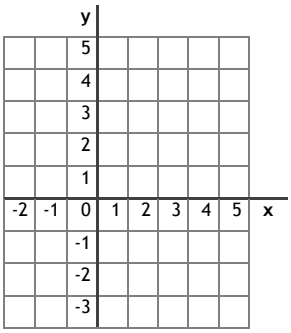
5. Use the equation of the line to find its gradient and y intercept. Then draw the line.



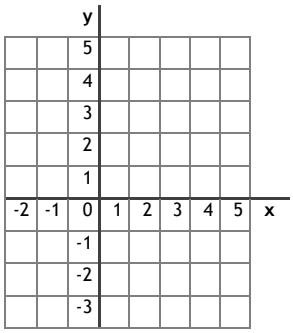
y = 3x - 1



y = 2x - 3

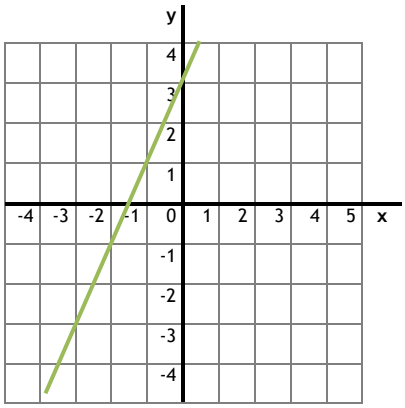


$y = \frac{1}{2}x + 1$



y = 4 – 2x

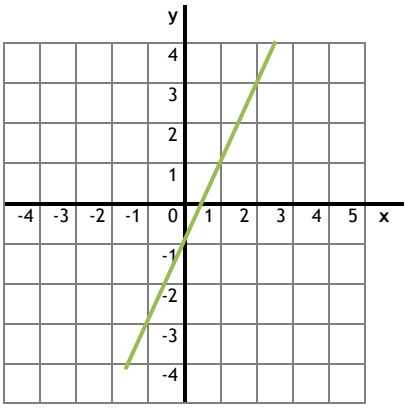
Finding the equation of a straight line graph



y intercept =

gradient =

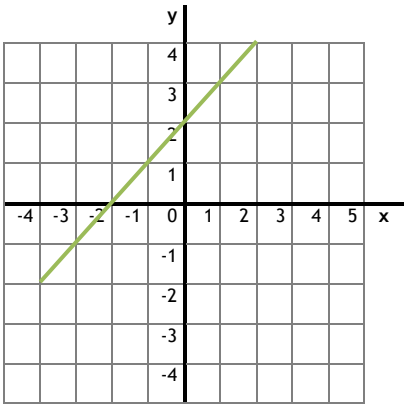
equation =



y intercept =

gradient =

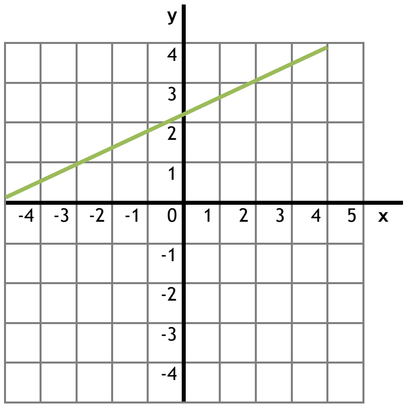
equation =



y intercept =

gradient =

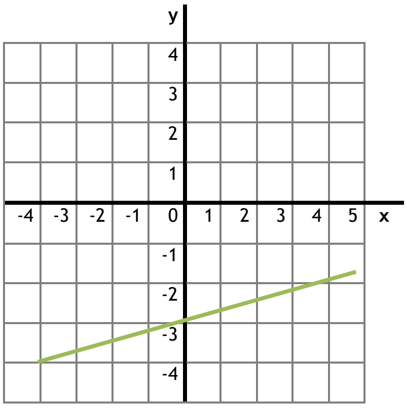
equation =



y intercept =

gradient =

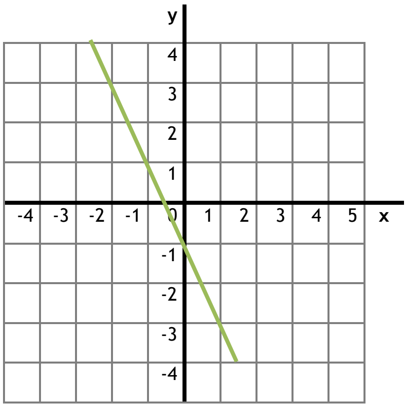
equation =



y intercept =

gradient =

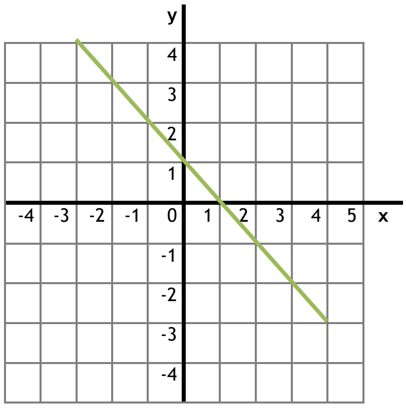
equation =



y intercept =

gradient =

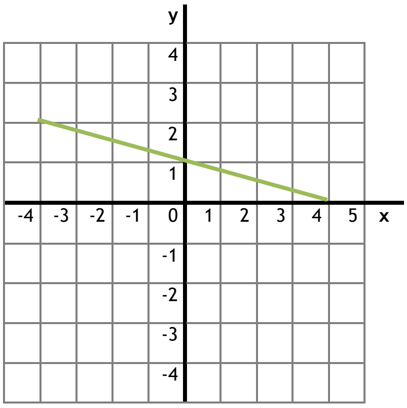
equation =



y intercept =

gradient =

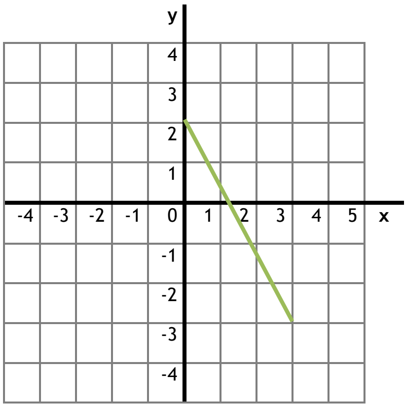
equation =



y intercept =

gradient =

equation =



y intercept =

gradient =

equation =

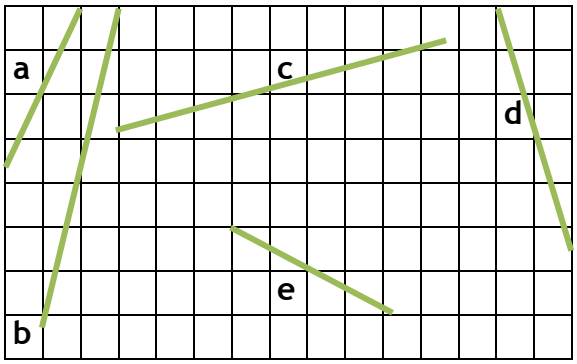
Answers:

1.

a = 3 **b** = 1 **c** = 4

d = $\frac{1}{3}$ **e** = -2

2.



3.

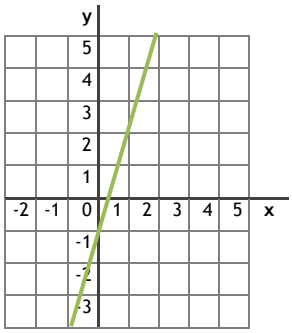
a = 4 **b** = 1 **c** = -3

d = 0 **e** = 3 **f** = -2

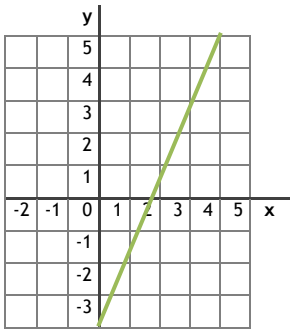
4. The first number is the gradient and the second is the y-intercept.

1. y = 1x + 1 **2.** y = 3x – 2 **3.** y = ½x + 3 **4.** y = -1x + 3

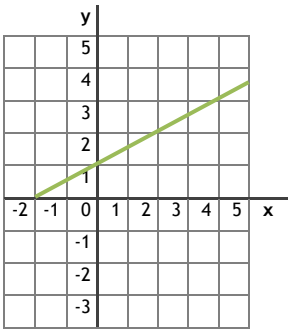
5.



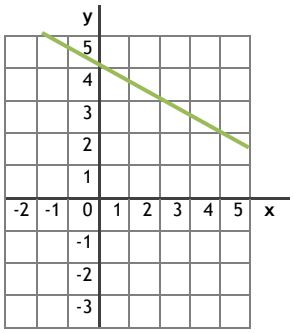
y = 3x - 1



y = 2x - 3



y = $\frac{1}{2}$x + 1



y = 4 – 2x

6. The first number is the gradient and the second is the y-intercept.

1. y = 2x + 3 **2.** y = 2x – 1 **3.** y = 1x + 2

4. y = $\frac{1}{2}$x + 2 **5.** y = $\frac{1}{4}$x – 3 **6.** y = -2x – 1

7. y = -1x + 1 **8.** y = $-\frac{1}{4}$x + 1 **9.** y = $-\frac{5}{3}$x + 2