

Knowledge Organiser - U4 - Linear Graphs

What are the equations of lines parallel to the x-axis and y-axis?

Lines parallel to the axes **R**

All the points on this line have a x coordinate of 10

All the points on this line have a y coordinate of -2

eg (3, -2) (7, -2) (-2, -2) all lay on this line because the y coordinate is -2

Lines parallel to the y axis take the form $x = a$ and are vertical

Lines parallel to the x axis take the form $y = a$ and are horizontal

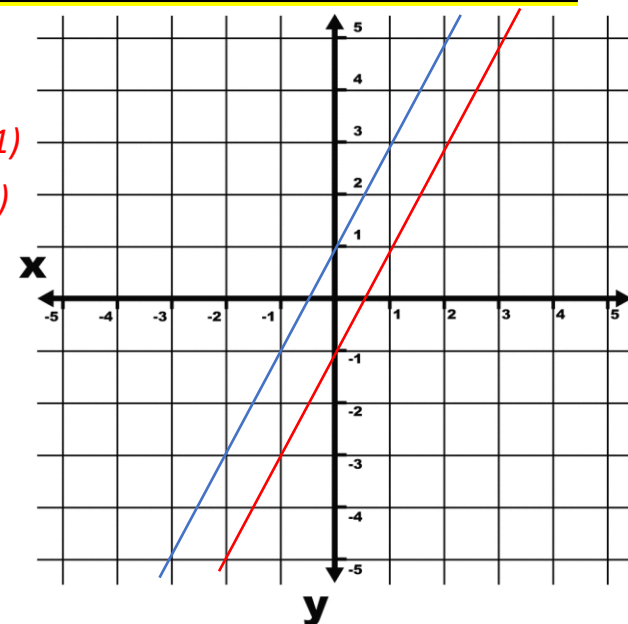
Intersection points

How do you use gradient and y – intercept of a line to draw the graph?

Draw these lines using gradient and y –Intercept?

$y = 2x - 1$ Gradient = 2, y-intercept = (0, -1)

$y = 2x + 1$ Gradient = 2, y-intercept = (0, 1)



What do you notice about these lines?

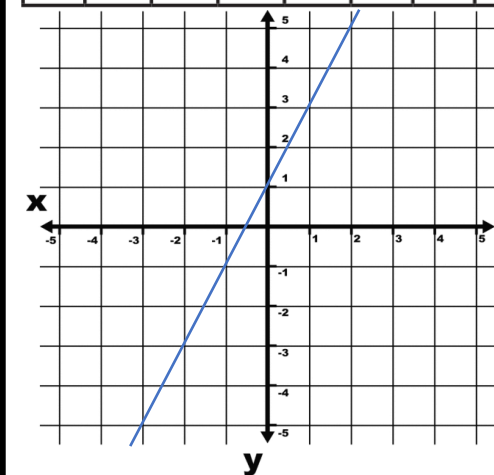
Both lines have the same gradient.

Both lines are parallel.

How do you draw a straight line graph when given its equation?

For example:- draw the graph of the line $y = 2x + 1$

x	-4	-3	-2	-1	0	1	2	3	4
y	-7	-5	-3	-1	1	3	5	7	9



What does $y = 2x - 1$ tell you about the line?

What are the gradient and y – intercept of the line $y = 2x + 1$?

This is an equation of a linear graph. The gradient of the line is 2 and y intercept is (0, 1).

$y = mx + c$

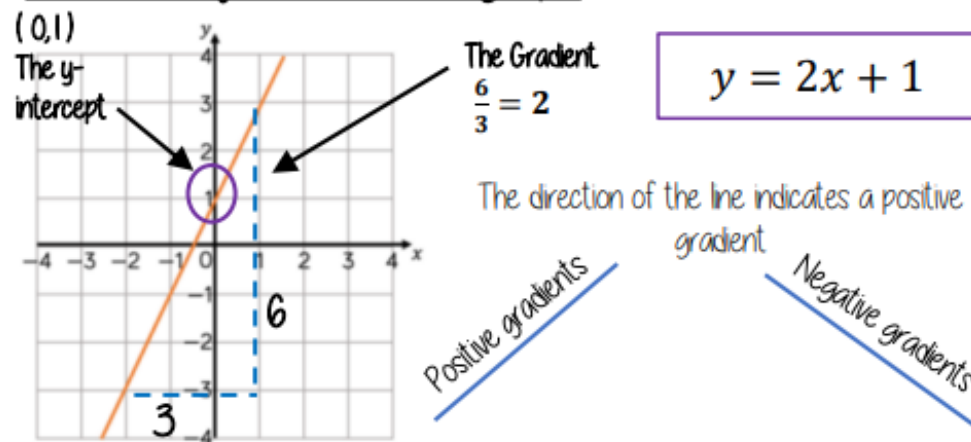
The coefficient of x (the number in front of x) tells us the gradient of the line

$y = mx + c$

The value of c is the point at which the line crosses the y-axis. Y intercept

y and x are coordinates

Find the equation from a graph



Two lines are **parallel**, if the gradients are **equal**.

Two lines are **perpendicular**, if the gradients are **negative reciprocal**.

Key Words

Coordinates

Vertical

horizontal

Gradient

intercept

plot

parallel

perpendicular

Hegarty Maths
199, 205-208 &
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