Working in the Cartesian Plane

Key Vocabulary

Quadrant— Qu/ad/rant — One of the four regions on a graph

Origin — O/ri/gin —The centre of the axis. The point(0,0)

Gradient — Gr/a/di/ent—The measure of steepness of a line

Y-Intercept— In/ter/c/ept—When a line crosses the Y Axis

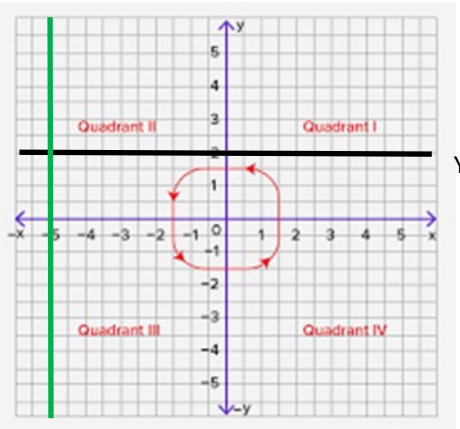
Horizontal— Ho/riz/on/tal—A straight line across the page

Vertical—- Ver/tic/al—A straight line down the page from top to bottom

Equation of a straight line —- E/qu/a/tion y = mx + c. The equation used to calculate coordinates of a straight line

Quadrants and lines Parallel to the axis

X = -5



Y = a

A horizontal line

Y = 2

X = b

A vertical lines

Finding Coordinates from an Equation

Y = 2x + 3

You need to choose 3 different x coordinates and find the y coordinate for each.

When x = 1,

y = 2 x 1 + 3 so, y = 5

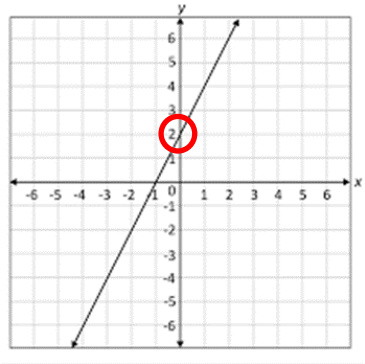
The coordinate is (1,5)

When x = 2

Y = 2 x 2 + 3 so, y = 7

The coordinate is (2,7)

Equations of a line



Y = mx + c

m = gradient of the line

C = y intercept

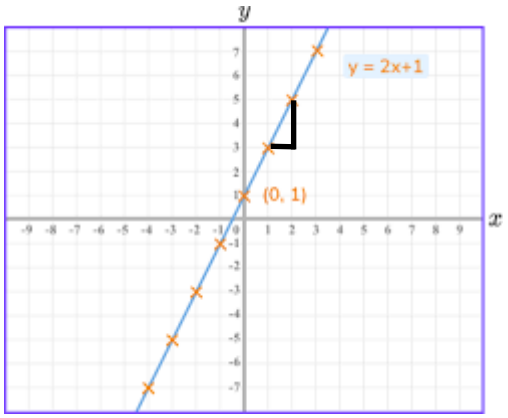
Y intercept = 2

Gradient = 2 (for every 1 across, it is 2 up)

Equation of the line:

Y = 2x + 2

Gradient



Blue line —For every 1 across, it goes 2 up, so the gradient is 2.

If the line slopes downhill, (starts in quadrant 2 and goes to quadrant 4), it is negative.

Gradient of a line = $\frac{x\ distance}{y\ distance}$