Year 8 higher topic 10

Graphs

Linear graph definition

y = mx+c is the equation for a diagonal line.

The m is the gradient of the line, this tells us how steep the line is.

The c is the y-intercept, this tells us where the graph crosses the y axis.

What careers would use these skills?

Architect will calculate the gradient when looking at the pitch of a roof, economist and engineers.

Midpoints

The midpoint is the coordinate in the middle of two points. You can do this by averaging the x coordinates and then the y coordinates.

Eg. Find the midpoint between (2,3) and (6, 10)

The value in the middle of 2 and 6 is 4

The value in the middle of 3 and 10 is 6.5

So the midpoint is (4, 6.5)

Plotting a linear graph

Construct a table of values to calculate coordinates.

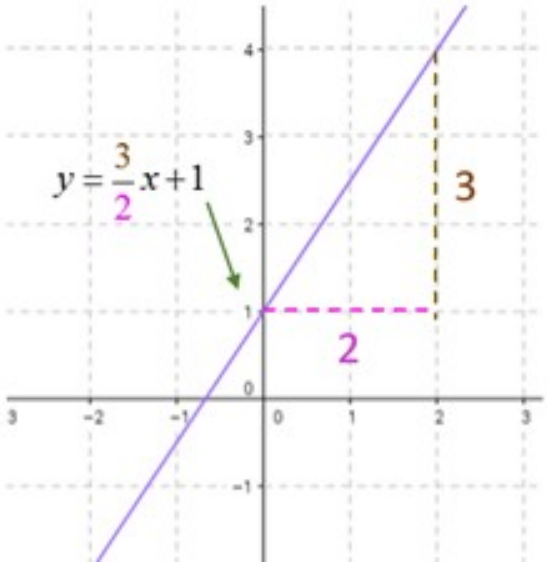
x	-3	-2	-1	0	1	2	3
y= x +3	0	1	2	3	4	5	6

Then plot the points and join them up with a straight line.

Gradient-intercept method

(use when the equation is in the form y = mx + c)

1. Plot the y-intercept.
2. Using the gradient, plot a second point.
3. Draw a line through the two points plotted.



Direct proportion problems

Eg.1. Tam and Charles go strawberry picking. Tam pays £8·40 for 2 kg of strawberries.
Charles picks 4.5 kg of strawberries.

How much does Charles pay?

8.40 = £4.20 per kg

2

4.2 x 4.5 = £18.90

Eg.2. Edie drinks 12 litres of water in 5 days.

At this rate, how much water would she drink in 3 days?

12 = 2.4 L per day

5

2.4 x 3 = 7.2 L