

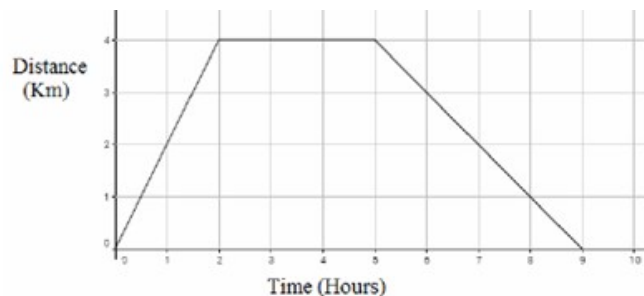
### Distance time graphs

You can find the speed from the gradient of the line (Distance  $\div$  Time)

The steeper the line, the quicker the speed.

A horizontal line means the object is not moving, it is stationary.

The y axis shows the distance from the starting point, the first 2 hours on the graph below how an object moving away, the middle 3 hours are when the object is stationary and the last 4 hours show the object moving back to the starting point.



### Calculate the gradient (m)

The gradient refers to the 'steepness' of the line.

Choose two coordinates on the graph

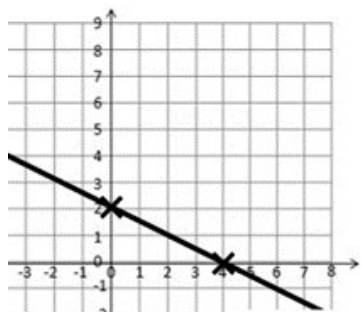
$$m = \frac{\text{change in y coordinates}}{\text{change in x coordinates}}$$

Eg.

Change in y = down 2

Change in x = right 4

$$m = -2 \div 4 \\ = -0.5$$



## Year 10 foundation topic 9

### Graphs

What careers would use these skills?

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

### Cover up method for plotting linear graphs

(use when the equation is in the form  $ax + by = c$ )

1. Cover the term and solve the resulting equation. Plot this on the
2. Cover the term and solve the resulting equation. Plot this on the
3. Draw a line through the two points plotted.

### Parallel lines

Two lines are parallel if they have the same gradient.

Eg.  $y = 5x + 7$  and  $y = 5x - 12$  are parallel lines as the value with the x are equal.

$$y = mx + c$$

This 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.

### Plot linear graphs using a table of values

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.

