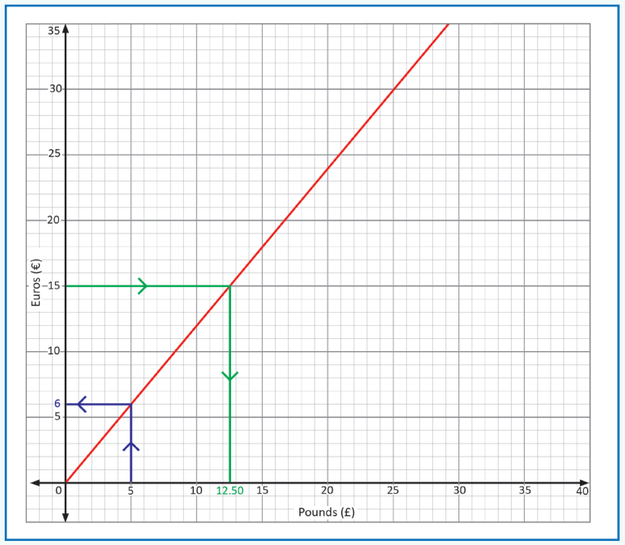
Special graphs

Conversion graphs, travel graphs and real-life graphs.

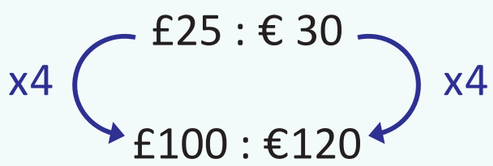
Conversion graphs

A conversion graph is used to change from one unit to another. For example, this could be changing between inches and centimetres, pounds and dollars, or pints and litres. Conversion graphs will always have a straight line.
The following example shows a conversion graph between pounds (£) and euros (€). It is possible to use the graph to convert any value in pounds to euros and any value in euros to pounds.
The blue line on the right shows how you would use the graph to convert £5 into euros. The answer would be roughly €6.
The green line shows how you would use the graph to convert €15 into pounds. The answer would be roughly £12.50.



Further use of conversion graphs

When a graph shows direct proportion like this one, it is possible to use the graph to convert values that are not on it. For example, to convert £100 to euros, we would need to look for factors of 100 on the x-axis. Then, multiply our factor to make it up to £100.
Multiply the value on the y-axis corresponding to your chosen factor by the same value to scale it in the same way.
E.g. if we chose to use £25 as our factor of 100, we need to multiply it by 4 to scale it to £100.
From the graph we see that £25 converts to €30. Therefore,
£100 = 4 × €30 = €120.

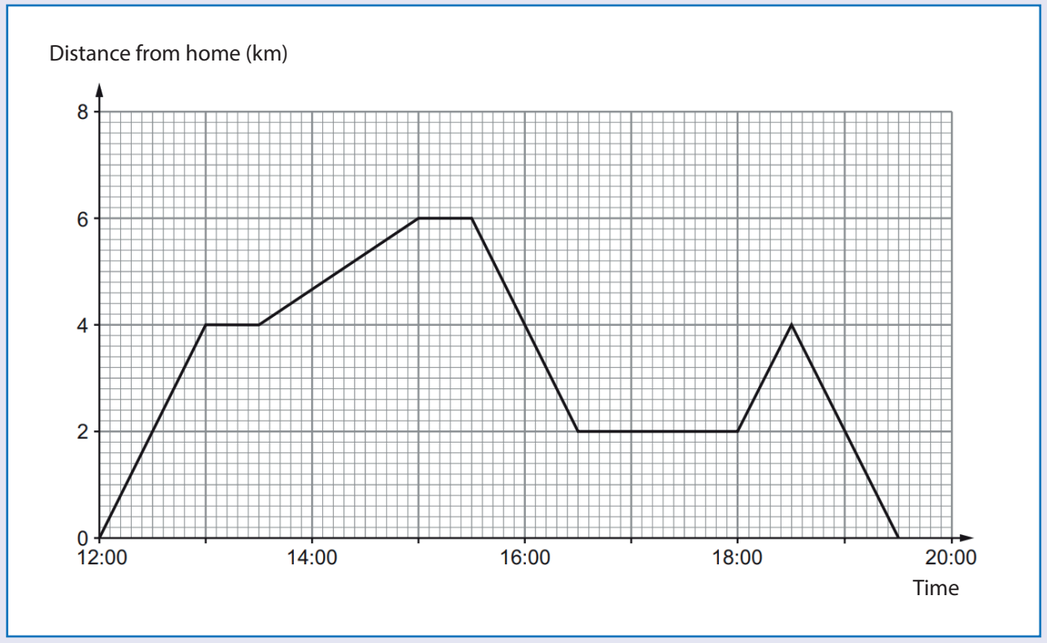


Check that you can:
- *interpret scales on axes*
- *convert between hours and minutes.*

Travel graphs

We can tell some things about how an object is moving by looking at its 'distance – time' or 'travel graph'.

- Straight lines that are not horizontal indicate that the object is travelling at a constant speed.
- Horizontal lines show that the object is not getting any further from the starting point. The object is most likely to be stationary.
- A downwards slope indicates that the object is moving in a direction towards the starting position.
- A steeper slope indicates a faster speed as more distance is being covered over a shorter time.



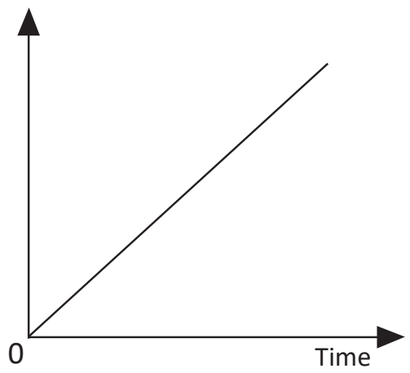
Special graphs

Conversion graphs, travel graphs and real-life graphs.

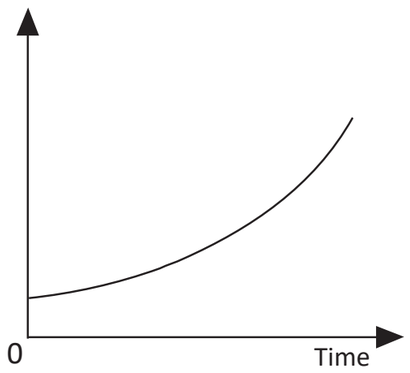
Real-life graphs

Real-life graphs are graphs that represent real-life scenarios or situations. This type of graph could be used to show anything. Therefore, you should pay careful attention to all the information being shown and the shape to interpret it correctly. You should always look at the labels on the axes to understand what it shows and the range and scale of each axis as this will affect how the graph looks.

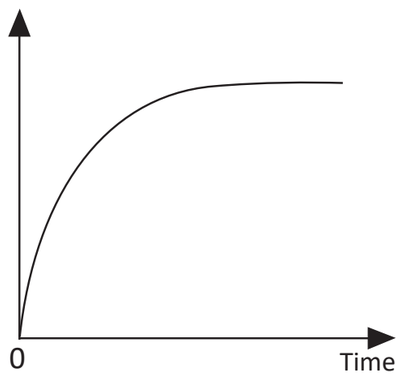
This graph represents a constant increase with time.



This graph represents a situation where the rate of increase is initially slow but then continues to increase with time.

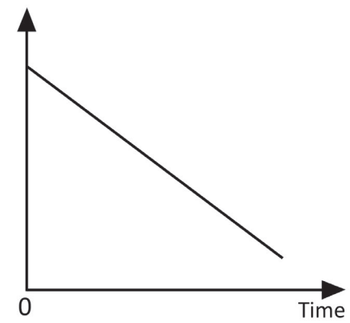


This graph represents a high initial rate of increase which then slows down.

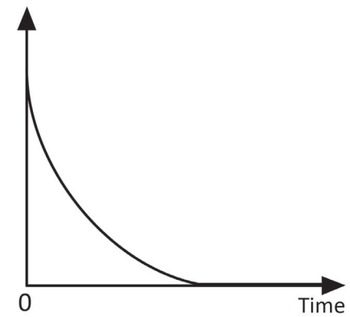


REMEMBER!
The formula to calculate speed is $\frac{\text{distance travelled}}{\text{time taken}}$.

This graph represents a constant rate of decrease with time.



This graph represents a high initial rate of decrease which then slows down towards zero.



Some graphs can represent both an increase and a decrease at different times. This graph represents an increase to a maximum point then a decrease (at the same rate as the increase).