### M3.4 – Determine the intercept of a graph

### Tutorials

Learners may be tested on their ability to:

* read off an intercept point from a graph, e.g. compensation point in plants.

**Determining the intercept of a graph**

An intercept is where one line on your graph crosses another. This could be where a line of best fit crosses either the x or y axis. Or it could be where two lines of best fit cross each other.

In section M3.3 we talked about graphs represented by the linear relationship y = mx + c, where “m” represents the gradient of the line, and “c” represents the y-intercept. Finding the y-intercept is easy – it is simply where the line crosses the y axis, where x = 0. Similarly, the x-intercept is where the line crosses the x axis, where y = 0.

*Intercepts = where the line crosses either the x or y axis*

Note: if your x axis doesn’t start from zero, you will not be able to read off the y intercept in this way. If you need to find the y intercept you should start your x axis from zero. Likewise, if you are aiming to find the x intercept when you have plotted your data you should make sure that your y axis starts from zero.

As well as finding the intercepts of a graph, you also need to be able to find and read off the intersection of two or more data series from a graph. This is basically where two different curves on the same axes intersect.

For example, you may be asked to find the compensation points in plants. Compensation points are where the rate of photosynthesis exactly matches the rate of respiration. In this graph the compensation points (L) are where the graphs representing the rate of photosynthesis and the rate of plant respiration intersect.



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