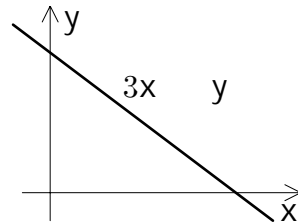


Mathematics Drop-in Centre

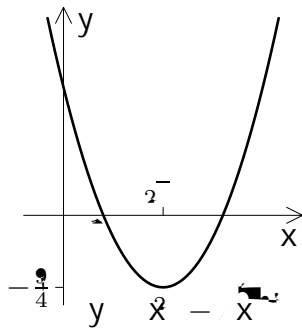
GRAPHS

Graph sketching is a very important skill. From a well drawn graph you may be able to immediately see properties of a function including roots, its turning points and where the function is increasing or decreasing. Graphs should always be **large** and **neatly drawn** and important features should be **labelled**.



Setting $y = 0$ gives the x intercept.
 We plot these points and draw the line joining the

intercepts on the axes. For example, consider $3x - y = 0$.
 Substituting $x = 0$ gives $y = 0$.
 Substituting $y = 0$ gives $x = 0$.



The quadratic equation $y = ax^2 + bx + c$ and solving for y gives the y intercept.
 represents a **parabola**. To sketch the graph we need to find its roots. See revision worksheets on quadratics if you need and note its concavity. For a more accurate sketch the y intercept and vertex may also be useful. Consider for example $y = x^2 - 3x + 3/4$. Here are x intercepts at the roots of the quadratic $x^2 - 3x + 3/4 = 0$.

EXERCISES

Please try to complete the following exercises. Remember that you **cannot** expect to understand mathematics without doing lots of practice. Please do not look at the answers before trying the questions. If you get a question wrong you should go through y