


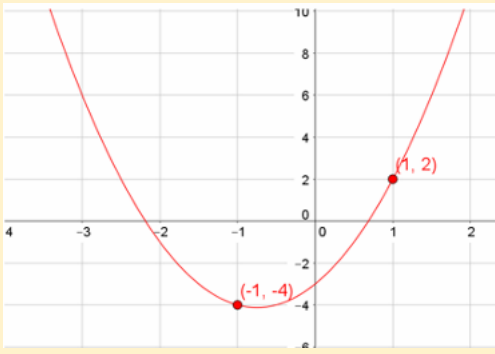


## Assess your learning - Functions and Graphs

Where is your learning at? <b>Be Honest!</b>	 red	 orange	 green	Revised for 10 Week Exam	Revised for Summer exam
<b>Can you answer the following questions?</b>					
I can define what is meant by the terms function, domain, range and codomain.					
I can evaluate functions when given the function and an input. E.g. $f(x) = 2x^2 - 3$ , find $f(-1)$ or $f(3)$ .					
I can find the input to a function that would give a certain output. E.g. $g(x) = x^2 + 3x$ , solve $g(x) = 18$ .					
I can find the function, when given a graph of it, and some points on it. E.g. The graph of $f(x) = ax^2 + bx - 3$ is shown below. Find $a$ and $b$ . 					
I can graph any function when given the domain and the function. E.g. Graph the function $h(x) = x^3 + x^2 - 3x$ in the domain $-1 \leq x \leq 5$					
I can interpret a graph. E.g. Given a graph of $f(x) = x^2 + 3x - 4$ and $g(x) = 5x - 2$ , I can find i) $f(x) = g(x)$ ii) $f(x) < g(x)$ iii) where $f(x) = 0$ iv) the minimum point of $f$					
I can explain what effect changing certain values in a function have on its graph. (See Transformations) E.g. Given a graph of $f(x) = 3x^2 + 5x - 2$ , sketch the graph of $6x^2 + 5x - 2$					
I can solve problems involving composite functions. E.g. If $f(x) = 2x - 3$ and $g(x) = x^2 + 1$ , find i) $f \circ g(x)$ , ii) $g \circ f(2)$					
I can decompose a function into simpler composite functions. E.g. Decompose $(2x - 5)^3$ into 3 separate functions.					
I can write a quadratic function in completed square form.					

E.g. Write  $f(x) = 2x^2 + 8x - 9$  in completed square form.

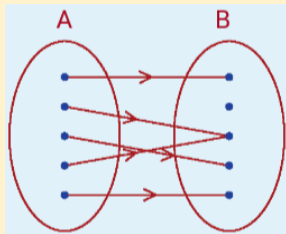
I can write down the axis of symmetry and the min/max point of a function, when given it in completed square form.

E.g. If  $h(x) = 2(x - 3)^2 + 7$ , what is the axis of symmetry and the minimum point?

I can explain the terms injective, surjective and bijective.

I can use the horizontal line test to check if a function is i) injective ii) surjective E.g. If  $g(x) = 5x^2 - 7$ , determine if the function is injective, or surjective, or bijective.

I can tell if a function is injective, surjective or bijective from looking at its mapping diagram. E.g. Is the function below injective, surjective or bijective?



I can check if two functions are inverses of each other, or not. E.g. Investigate if  $f(x) = 2x + 1$  and  $g(x) = \frac{x-1}{2}$  are inverses of each other, or not.

I can find the inverse of a given function.

E.g. Find the inverse of the function  $h(x) = e^x$

I can sketch the graph of the inverse of a given function.

E.g. Sketch the inverse of the function shown below:

$$f(x) = 2^x, f: [1, \infty) \rightarrow [2, \infty)$$

