

## Functions

Functions could be any operation or combination.

<u>IN</u>		<u>Function</u>		<u>OUT</u>
4	→	$\times 3$	→	12
-6	→	$+ 8$	→	2
a	→	squared	→	$a^2$

The notation we use is  $f(a) = a^2$  which means the function of a is a squared. The letter used before the bracket could be any letter i.e.  $h(a)$  or  $t(a)$ .

We can then substitute values into the function to find a solution.

Example: If  $h(x) = 3x + 2$  find:

$$\begin{array}{lll} \text{a) } h(t) = 3(t) + 2 & \text{b) } h(2a) = 3(2a) + 2 & \text{c) } h(3) = 3(3) + 2 \\ = 3t + 2 & = 6a + 2 & = 11 \end{array}$$

## Backwards Functions

Sometimes we are given the output value instead of the input. We solve this just like an algebraic equation.

Example:

1) If  $h(x) = 3x - 4$  and  $h(x) = 11$  find  $x$

$$\text{Let } 3x - 4 = 11$$

$$3x = 15$$

$$x = 5$$

2) If  $f(x) = 2x + 3$  and  $f(x) = x - 4$  find  $x$

$$\text{Let } 2x + 3 = x - 4$$

$$x + 3 = -4$$

$$x = -7$$