

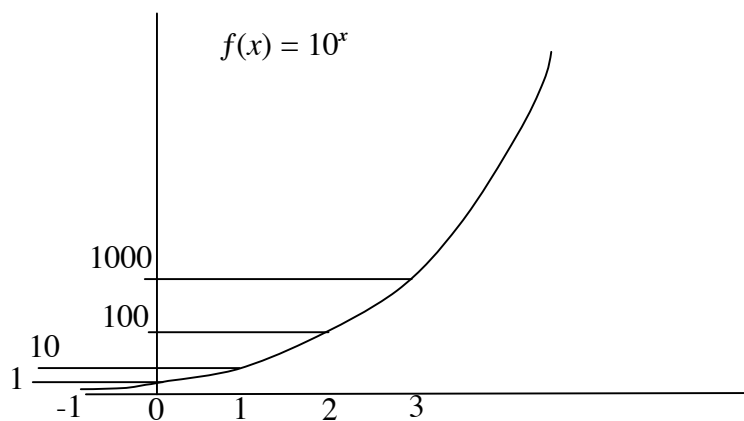
Exponential Functions

The exponential function f with base a is denoted by $f(x) = a^x$, where $a \neq 1$, and x is any Real number. The function will always be positive.

Eg If the base is 2 and $x = 4$, then the exponential function $f(4) = 2^4 = 16$.

If the base is 10 then exponential values for integers are as follows:

-1	0.1
0	1
1	10
2	100
3	1000
4	10,000



Logarithmic Functions

These are the inverse function of the Exponential function.

For $x > 0$, $a > 0$, and $a \neq 1$ we have:

$$f(x) = \log_a(x) \quad \text{if and only if } a^{f(x)} = x$$

ex1: the exponential equation $4^3 = 64$ could be written as a log equation as:
 $\log_4 64 = 3$.

ex2: the exponential equation $5^{-2} = 1/25$ could be written as a log equation as:
 $\log_5(1/25) = -2$.

