

# Logarithm

The '*logarithm of  $x$  to base  $b$* ' is what you have to raise  $b$  to the power of in order to get  $x$ . In symbols,

$$\log_b x = a \iff b^a = x.$$

Here,  $b$  is a positive real number other than 1 and  $x$  is a positive real number.

Being closely related to powers (indices), there are [logarithm laws](#) corresponding to the [index laws](#).