Logarithms

$$\log_2 8 = 3 \quad \Leftrightarrow \quad 2^3 = 8$$

$\log_x 1 = 0$	Because…	$x^0 = 1$
$\log_x x = 1$	Because…	$x^1 = x$
$\log_x a + \log_x b = \log_x ab$	Because…	$x^a \times x^b = x^{a+b}$
$\log_x a - \log_x b = \log_x \frac{a}{b}$	Because…	$x^a \div x^b = x^{a-b}$
$n \log_x a = \log_x a^n$	Because…	$(x^a)^n = x^{an}$

$$log_2 8 + log_2 16 = log_2 128$$
$$3 + 4 = 7$$
$$2^3 \times 2^4 = 2^7$$

$$2log_2 8 = log_2 8^2 = log_2 64$$
$$2 \times 3 = 6$$
$$(2^3)^2 = 2^6$$