log:

$$\log_2(10)=x \iff 2^x=10 \implies x=3.32$$

Rules:

$$\log_a(mn) = \log_a(m)+\log_a(n)$$

$$\log_a\left(\frac{m}{n}\right) = \log_a(m)-\log_a(n)$$

$$\log_a(m^n) = n.\log_a(m)$$

exponent:

$$a^n = a\,x\,a\,x\,a\,....x\,a \quad (multiply\ a\ n\ time\ by\ it\ self)$$

$$a^n \;.\; a^m = a^{n+m}$$

$$a^n \;.\; b^n = (a.b)^n$$

$$\frac{a^n}{a^m} = a^{n-m}$$

$$\frac{a^n}{b^n} = \left(\frac{a}{b}\right)^n$$

$$(a^n)^m = a^{n.m}$$

$$\left(a^{n^m}\right) = \left(a^{(n^m)}\right)$$

$$\sqrt[n]{a} = a^{\frac{1}{n}}$$

$$a^0 = 1$$

$$0^n = 1$$