

Laws of Exponents

$$(x^a)^b = x^{(ab)} \quad (1)$$

$$x^a * x^b = x^{a+b} \quad (2)$$

$$\frac{x^a}{x^b} = x^{a-b} \quad (3)$$

$$x^a y^a = (xy)^a \quad (4)$$

$$x^{-a} = \frac{1}{x^a} \quad (5)$$

$$\left(\frac{x}{y}\right)^a = \frac{x^a}{y^a} \quad (6)$$

$$x^{\frac{a}{b}} = \left(x^{\frac{1}{b}}\right)^a = (x^a)^{\frac{1}{b}} = \sqrt[b]{x^a} \quad (7)$$

$$x^0 = 1 \quad (8)$$

$$0^x = 0 \quad (9)$$