

Law of Indices Formula

Given $a, b \neq 0, m, n \in \mathbb{Q}$

(To be ignored under secondary syllabus)

$$a^m \times a^n = a^{m+n}$$

$$(ab)^m = a^m \times b^m$$

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

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

$$(a^m)^n = a^{m \times n}$$

$$a^0 = 1$$

$$a^{-1} = \frac{1}{a}$$

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

(where m is a positive integer)

$$a^{-m} = \frac{1}{a^m}$$