

Exponents

Exponentiation is a mathematical operation, written as a^n , involving two numbers, the **base** a and the **exponent** n . When n is a positive integer, exponentiation corresponds to repeated multiplication; in other words, a product of n factors of a :

The exponent is usually shown as a superscript to the right of the base. The exponentiation a^n can be read as: *a raised to the n -th power*, *a raised to the power [of] n* , or possibly *a raised to the exponent [of] n* , or more briefly as *a to the n* . Some exponents have their own pronunciation: for example, a^2 is usually read as *a squared* and a^3 as *a cubed*.

$$\text{example } a^n = \underbrace{a \times \cdots \times a}_n,$$

$$2^0 = 1$$

$$2^1 = 2$$

$$2^2 = 4$$

$$2^3 = 8$$

$$2^4 = 16$$

$$2^5 = 32$$

$$2^6 = 64$$

$$2^7 = 128$$

$$2^8 = 256$$

$$2^9 = 512$$

$$2^{10} = 1024$$

Exponents of two's