Power of a number

Definition

$$a^n = \underbrace{a \cdot a \cdots a}_{n \text{ times}}$$

Example:

$$2^4 = 2 \cdot 2 \cdot 2 \cdot 2 = 16$$

$$5^3 = 5 \cdot 5 \cdot 5 = 125$$

$$10^5 = 100000$$

Attributes

Product of powers

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

$$3^4 \cdot 3^2 = 3^6 = 729$$

Division of powers

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

$$3^4 \div 3^2 = \frac{3^4}{3^2} = 3^2 = 9$$

Multiplication power of power

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

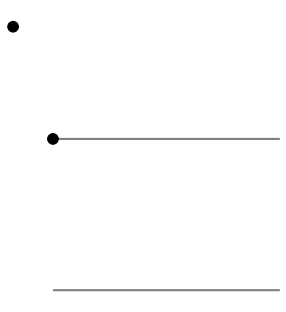
$$(2^2)^3 = 2^{2 \cdot 3} = 2^6 = 64$$

Power of fraction

$$(a^n \cdot b^n) = (a \cdot b)^n$$

$$(a^n \div b^n) = (a \div b)^n$$

Dot, lines, ray



· Dot

· Ray

· Line

Ray can extend only in one way endlessy. Line can be extend in two ways endlessly. Dot is a dot.