

Puissances

$$a^n = \underbrace{a \times a \times a \times \dots \times a \times a}_{n \text{ fois}} \quad \text{avec} \quad \begin{cases} a^1 = a \\ a^0 = 1 \end{cases}$$

$$10^n = \underbrace{1000\dots0}_{n \text{ zéro}}$$

$$10^{-n} = \underbrace{0,000\dots01}_{n \text{ zéro}}$$

Règles de calcul

| Règles | Exemples |
|--|--|
| $a^n \times a^p = a^{n+p}$ | $2^2 \times 2^3 = 2^{2+3} = 2^5$ $3^2 \times 3^{-5} = 3^{2-5} = 3^{-3}$ |
| $\frac{a^n}{a^p} = a^{n-p}$ | $\frac{2^4}{2^3} = 2^{4-3} = 2^1 = 2$ |
| $\frac{1}{a^p} = a^{-p}$ | $\frac{1}{5^3} = 5^{-3}$ |
| $(a \times b)^n = a^n \times b^n$ | $(2 \times 5)^2 = 10^2$ $(2 \times 5)^2 = 2^2 \times 5^2$ |
| $\left(\frac{a}{b}\right)^n = \frac{a^n}{b^n}$ | $\left(\frac{3}{2}\right)^5 = \frac{3^5}{2^5}$ |
| $(a^n)^p = a^{n \times p}$ | $(2^3)^4 = 2^{3 \times 4} = 2^{12}$ |

