

Notação científica

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Notação científica

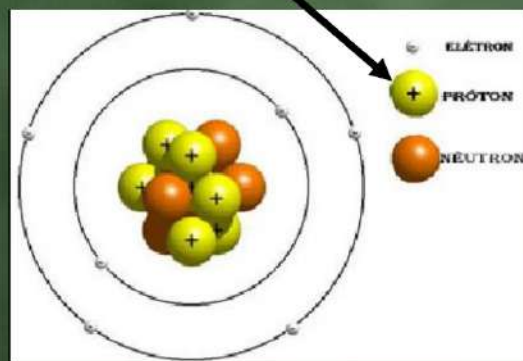
Além da medida que vemos rotineiramente, profissionais das áreas de engenharias, física, matemática e em outros ramos das ciências, precisam representar medidas com números reais muito grandes ou muito pequenos. Veja:

Raio do átomo de hidrogênio
 $\approx 0,00000000005 \text{ m}$



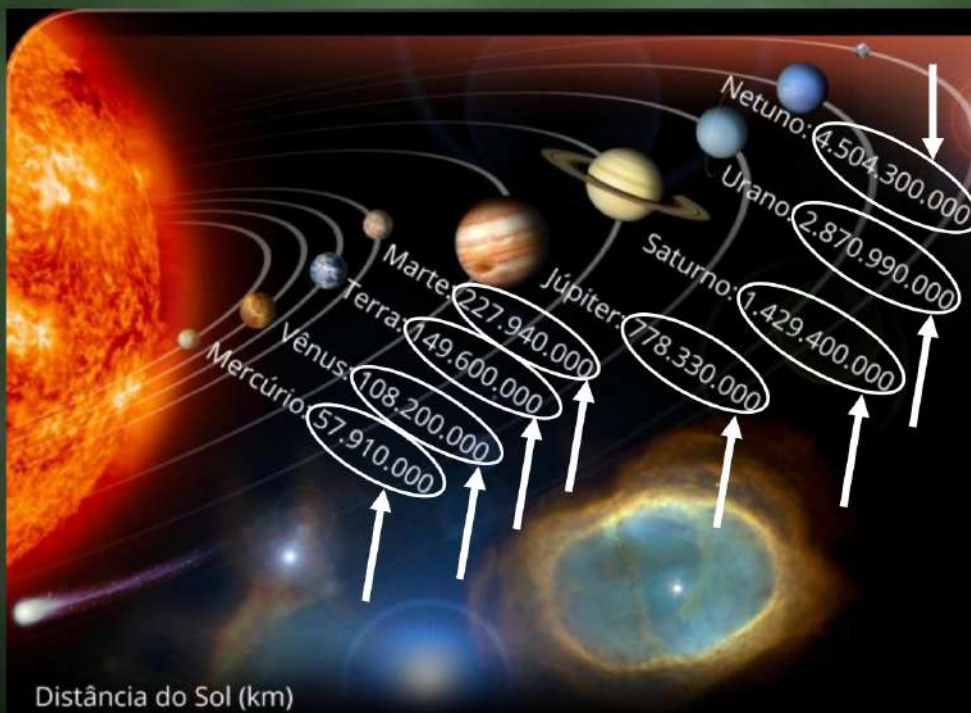
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Próton

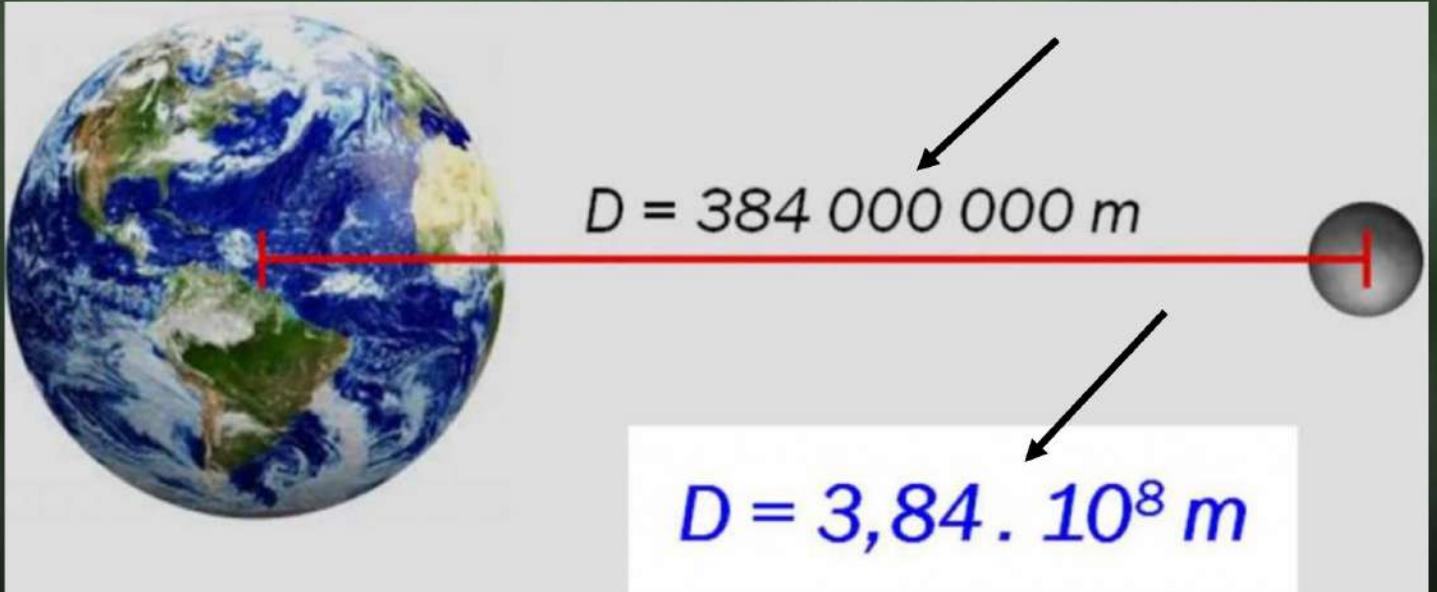


$$Massa = 0,0000000000000000000000000000000016725 \text{ kg}$$

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Um número escrito em notação científica fica no seguinte formato

$$a \times 10^n$$

$1 \leq a < 10$

$\dots, -2, -1, 0, 1, 2, \dots$

Deslocamento da vírgula



$$1 \leq 1,2 < 10$$

$$0,0012$$

$$1,2 \times 10^{-3}$$

Deslocamento da vírgula

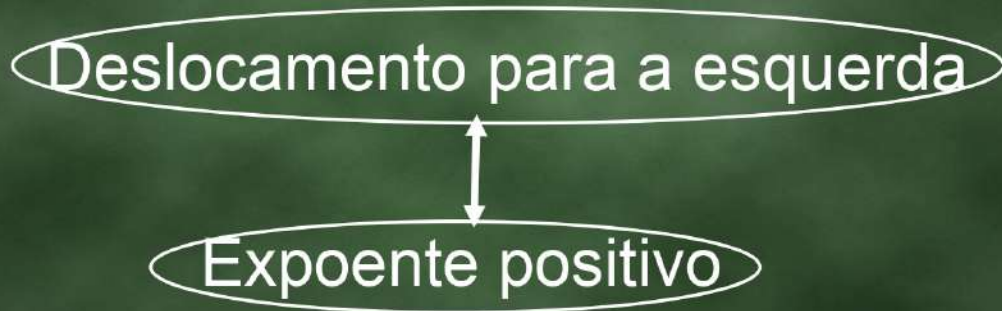


$$1 \leq 1,01 < 10 \quad 0,0,0,0,1,01$$

$1,01 \times 10^{-5}$

The diagram shows the conversion of the decimal number 0,0,0,0,1,01 into scientific notation. The number 1,01 is circled, and the exponent -5 is also circled. Arrows point from the inequality $1 \leq 1,01 < 10$ to the circled 1,01, and from the decimal number 0,0,0,0,1,01 to the circled -5.

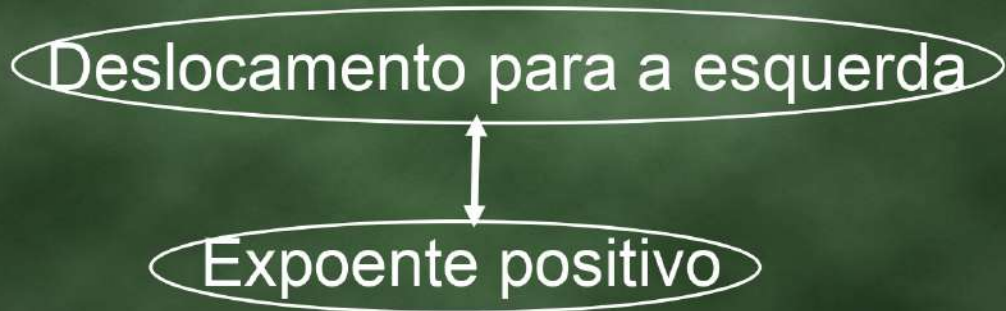
Deslocamento da vírgula



$$1 \leq 1,257 < 10 \quad 1,257,00,$$
$$\swarrow \quad \searrow$$
$$\textcircled{1,257} \times 10^{\textcircled{5}}$$

The diagram shows the conversion of the decimal number 1,257 to scientific notation. On the left, the inequality $1 \leq 1,257 < 10$ is shown. On the right, the number 1,257,00 is written with a comma as a thousands separator. Arrows from both the inequality and the number point to the scientific notation $\textcircled{1,257} \times 10^{\textcircled{5}}$. The number 1,257 and the exponent 5 are circled in the final expression.

Deslocamento da vírgula



$$1 \leq 3,71432 < 10 \quad 3,714,320,00,$$

$$3,71432 \times 10^8$$

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384,000,000,

$1 \leq 3,84 < 10$

$3,84 \times 10^8$