

OPERACIONES EN NOTACIÓN CIENTÍFICA



Realiza las siguientes operaciones con cantidades expresadas en notación científica, sin usar calculadora.



SUMA Y RESTA

A)

$$27.4 \times 10^{17} + 5.6 \times 10^{18} = \boxed{} \times 10^{17}$$

$$4.8 \times 10^{11} - 4.8 \times 10^{10} = \boxed{} \times 10^{11}$$

$$163.2 \times 10^{23} + 6.1 \times 10^{24} = \boxed{} \times 10^{24}$$

$$4.0017 \times 10^{14} - 10.203 \times 10^{12} = \boxed{} \times 10^{12}$$

$$0.0023 \times 10^{28} + 0.016 \times 10^{26} = \boxed{} \times 10^{26}$$

$$42.17 \times 10^{-13} + 4.302 \times 10^{-15} = \boxed{} \times 10^{-15}$$

$$0.05 \times 10^{-21} - 4.51 \times 10^{-23} = \boxed{} \times 10^{-21}$$

$$110 \times 10^{-8} + 1050 \times 10^{-10} = \boxed{} \times 10^{-8}$$

$$0.00124 \times 10^{-30} - 0.0206 \times 10^{-28} = \boxed{} \times 10^{-28}$$

$$4.802 \times 10^{-16} + 0.003 \times 10^{-14} = \boxed{} \times 10^{-14}$$



MULTIPLICACIÓN

B)

$$(23 \times 10^4)(2 \times 10^3) = 46 \times 10^{\boxed{}} = 4.6 \times 10^{\boxed{}}$$

$$-(6 \times 10^{-8})(5 \times 10^{-10}) = -30 \times 10^{\boxed{}} = -3 \times 10^{\boxed{}}$$

$$(-48 \times 10^6)(2 \times 10^{-3}) = -96 \times 10^{\boxed{}} = -9.6 \times 10^{\boxed{}}$$

$$(5 \times 10^{-3})(0.2 \times 10^{-6}) = 0.1 \times 10^{\boxed{}} = 1 \times 10^{\boxed{}}$$

$$(8 \times 10^{-15})(2 \times 10^3) = 16 \times 10^{\boxed{}} = 1.6 \times 10^{\boxed{}}$$

$$(-7 \times 10^{-11})(-5 \times 10^{-5}) = 35 \times 10^{\boxed{}} = 3.5 \times 10^{\boxed{}}$$



DIVISIÓN

C)

$$\frac{21.6 \times 10^{28}}{2 \times 10^8} = 10.8 \times 10^{\boxed{}} = 1.08 \times 10^{\boxed{}}$$

$$\frac{4.1 \times 10^6}{16.4 \times 10^{22}} = 0.25 \times 10^{\boxed{}} = 2.5 \times 10^{\boxed{}}$$

$$\frac{2 \times 10^{-8}}{-4 \times 10^4} = -0.5 \times 10^{\boxed{}} = -5 \times 10^{\boxed{}}$$

$$\frac{46 \times 10^{-14}}{2 \times 10^{-22}} = 13 \times 10^{\boxed{}} = 1.3 \times 10^{\boxed{}}$$

$$\frac{-188 \times 10^{15}}{2 \times 10^{-10}} = -94 \times 10^{\boxed{}} = -9.4 \times 10^{\boxed{}}$$

$$\frac{-3 \times 10^{-12}}{-4 \times 10^{-10}} = 0.75 \times 10^{\boxed{}} = 7.5 \times 10^{\boxed{}}$$



POTENCIA

D)

$$(8 \times 10^{23})^2 = 64 \times 10^{46} = 6.4 \times 10^{47}$$

$$-(7 \times 10^{-15})^3 = -343 \times 10^{-45} = -3.43 \times 10^{-43}$$

$$(-9 \times 10^{14})^2 = 81 \times 10^{28} = 8.1 \times 10^{29}$$

$$(-5 \times 10^{-7})^3 = -125 \times 10^{-21} = -1.25 \times 10^{-19}$$

$$-(22 \times 10^{11})^2 = -484 \times 10^{22} = -4.84 \times 10^{24}$$

$$(-3 \times 10^4)^6 = 729 \times 10^{24} = 7.29 \times 10^{26}$$



RAÍZ CUADRADA

E)

(Potencia par)

$$\sqrt{625 \times 10^{36}} = 25 \times 10^{18} = 2.5 \times 10^{19}$$

$$\sqrt{289 \times 10^{-24}} = 17 \times 10^{-12} = 1.7 \times 10^{-11}$$

$$\sqrt{169 \times 10^{18}} = 13 \times 10^9 = 1.3 \times 10^{10}$$

(Potencia impar)

$$\sqrt{44.1 \times 10^{29}} = \sqrt{441 \times 10^{28}} = 21 \times 10^{14} = 2.1 \times 10^{15}$$

$$\sqrt{2250 \times 10^{15}} = \sqrt{225 \times 10^{16}} = 15 \times 10^8 = 1.5 \times 10^9$$

$$\sqrt{129.6 \times 10^{-41}} = \sqrt{1296 \times 10^{-42}} = 36 \times 10^{-21} = 3.6 \times 10^{-20}$$

$$\sqrt{1440 \times 10^{-27}} = \sqrt{144 \times 10^{-28}} = 12 \times 10^{-14} = 1.2 \times 10^{-13}$$

$$\sqrt{32.4 \times 10^{-11}} = \sqrt{324 \times 10^{-12}} = 18 \times 10^{-6} = 1.8 \times 10^{-5}$$



OPERACIONES COMBINADAS

F)

$$\frac{(-5 \times 10^{40})(6 \times 10^{-8})}{(-2 \times 10^{-6})^2} = \frac{-30 \times 10^{32}}{4 \times 10^{-12}} = -7.5 \times 10^{44}$$

$$\frac{(8 \times 10^{-15})^3}{2\sqrt{64 \times 10^{28}}} = \frac{512 \times 10^{-45}}{2(8 \times 10^{14})} = 32 \times 10^{-60} = 3.2 \times 10^{-59}$$