

POTENCIAÇÃO

01.

a) $\left(-\frac{2}{7}\right) \cdot \left(-\frac{2}{7}\right) = \frac{4}{49}$

b) $\left(-\frac{1}{2}\right)^3 = \frac{(-1)^3}{2^3} = -\frac{1}{8}$

c) **1**

d) **1**

e) $\left(-\frac{2}{3}\right)^4 = \frac{(-2)^4}{3^4} = \frac{16}{81}$

f) $\left(-\frac{5}{1}\right)^2 = (-5)^2 = 25$

02.

a) $7^{9+6} = 7^{15}$

b) $2^{9-5} = 2^4$

c) $(2 \cdot 5)^5 = 10^5 = 100000$

d) $(5^2)^{0,5} = 5^{2 \cdot 0,5} = 5^1 = 5$

e) $3^{-485-(-448)} = 3^{-485+448} = 3^{-37}$

f) $\left(\frac{4286}{2143}\right)^5 = 2^5 = 32$

g) $\left(-\frac{2}{7}\right) \cdot \left(-\frac{2}{7}\right) = \frac{4}{49}$

h) $\left(-\frac{1}{2}\right)^3 = \frac{(-1)^3}{2^3} = -\frac{1}{8}$

i) $\frac{2^{5-4+2}}{2^{-6+4}} = \frac{2^3}{2^{-2}} = 2^{3-(-2)} = 2^{3+2} = 2^5 = 32$

j) $\frac{3^{6 \times 2} \cdot 3^{-8}}{3^{-7} \cdot 3^{4 \times 2}} = \frac{3^{12} \cdot 3^{-8}}{3^{-7} \cdot 3^8} = \frac{3^{12-8}}{3^{-7+8}} = \frac{3^4}{3^1} = 3^{4-1} = 3^3 = 27$

03.

$$\frac{10^{-3} \cdot (10^{-2})^2 \cdot 10^2}{(10^{-1} \cdot 10^2)^{-4}} = \frac{10^{-3} \cdot 10^{-4} \cdot 10^2}{(10^1)^{-4}} = \frac{10^{-5}}{10^{-4}} = 10^{-1} = 0,1$$

Opção: B

04.

$$(6^2)^{\frac{1}{2}} - (3^3)^{\frac{1}{3}} - (3^5)^{0,2} = 6^{2 \cdot \frac{1}{2}} - 3^{3 \cdot \frac{1}{3}} - 3^{5 \cdot 0,2} = 6^1 - 3^1 - 3^1 = 6 - 3 - 3 = 0$$

Opção: C

05.

$$\begin{aligned} & -1 \cdot \left\{ 64 - \left[5 \cdot 1 + 7 \cdot (81 - 79 + 1) \right] \right\} + 1 + 78 = \\ & = -1 \cdot \left\{ 64 - \left[5 \cdot 1 + 7 \cdot (3) \right] \right\} + 79 = \\ & = -1 \cdot \left\{ 64 - \left[5 + 21 \right] \right\} + 79 = \\ & = -1 \cdot \{ 64 - 26 \} + 79 = \\ & = -1 \cdot 38 + 79 = \\ & = -38 + 79 = \mathbf{41} \end{aligned}$$



06.

$$\begin{aligned} & \left[10^2 \cdot (10^{-3}) \right]^3 = \\ & = \left[10^{-1} \right]^3 = \mathbf{10^{-3} = 0,001} \end{aligned}$$



07.

$$P(4) = 10 \cdot 3^4 = 10 \cdot 81 = \mathbf{810}$$



08.

$$\begin{aligned} & 4^2 \cdot 4^{1200} \cdot 2,5^{1200} = \\ & = 4^2 \cdot (4 \cdot 2,5)^{1200} = \\ & = 16 \cdot (10)^{1200} = 16 \underbrace{000 \dots 00}_{1200 \text{ zeros}} \end{aligned}$$

Resp.: 1202 algarismos