

R000) RESPOSTAS

R001)

$$3^4 = 3 \cdot 3 \cdot 3 \cdot 3 = 81$$

R002)

$$2^5 = 2 \cdot 2 \cdot 2 \cdot 2 \cdot 2 = 32$$

R003)

$$1^4 = 1 \cdot 1 \cdot 1 \cdot 1 = 1$$

R004)

$$0^6 = 0 \cdot 0 \cdot 0 \cdot 0 \cdot 0 \cdot 0 = 0$$

R005)

$$(-2)^4 = (-2) \cdot (-2) \cdot (-2) \cdot (-2) = 16$$

R006)

$$\left(\frac{3}{4}\right)^3 = \frac{3^3}{4^3} = \frac{3 \cdot 3 \cdot 3}{4 \cdot 4 \cdot 4} = \frac{81}{256}$$

R007)

$$\left(-\frac{2}{3}\right)^3 = \frac{(-2)^3}{(3)^3} = \frac{(-2) \cdot (-2) \cdot (-2)}{3 \cdot 3 \cdot 3} = \frac{-8}{27} = -\frac{8}{27}$$

R008)

$$5^0 = 1$$

R009)

$$(2,43)^0 = 1$$

R010)

$$(-0,5)^0 = 1$$

R011)

$$17^1 = 17$$

R012)

$$(1,45)^1 = 1,45$$

R013)

$$(-5)^1 = -5$$

R014)

$$\left(-\frac{4}{7}\right)^1 = \left(-\frac{4}{7}\right) = -\frac{4}{7}$$

R015)

$$3^{-1} = \frac{1}{3^1} = \frac{1}{3}$$

R016)

$$(-3)^{-2} = \left(-\frac{1}{3}\right)^2 = \left(-\frac{1}{3}\right) \cdot \left(-\frac{1}{3}\right) = \frac{1^2}{3^2} = \frac{1}{9}$$

R017)

$$2^{-4} = \frac{1}{2^4} = \frac{1}{2 \cdot 2 \cdot 2 \cdot 2} = \frac{1}{16}$$

R018)

$$\left(\frac{2}{3}\right)^{-2} = \left(\frac{3}{2}\right)^2 = \frac{3^2}{2^2} = \frac{3 \cdot 3}{2 \cdot 2} = \frac{9}{4}$$

R019)

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

R020)

$$\left(\frac{-3}{4}\right)^{-3} = \left(\frac{4}{-3}\right)^3 = \frac{4 \cdot 4 \cdot 4}{(-3) \cdot (-3) \cdot (-3)} = \frac{64}{-27} = -\frac{64}{27}$$

R021)

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

R022)

$$\left(\frac{1}{3}\right)^{-2} = \left(\frac{3}{1}\right)^2 = \frac{3^2}{1^2} = \frac{3.3}{1.1} = \frac{9}{1} = 9$$

R023)

$$(-0,75)^2 = \left(-\frac{75}{100}\right)^2 = \left(\frac{75}{100}\right)^2 = \frac{75^2}{100^2} = \frac{5625}{10000} = 0,5625$$

R024)

$$(2,43)^0 = 1$$

R025)

$$2^6 = 2.2.2.2.2.2 = 64$$

R026)

$$(-2)^6 = (2)^6 = 2^6 = 2.2.2.2.2.2 = 64$$

R027)

$$2^5 = 2.2.2.2.2 = 32$$

R028)

$$(-2)^5 = -2^5 = 2.2.2.2.2 = -32$$

R029)

$$3^2 = 3.3 = 9$$

R030)

$$(-3)^2 = (3)^2 = 3.3 = 9$$

R031)

$$3^3 = 3.3.3 = 27$$

R032)

$$(-3)^3 = -(3)^3 = -(3 \cdot 3 \cdot 3) = -27$$

R033)

$$(-4)^{-1} = \left(\frac{1}{-4}\right)^1 = \frac{1}{-4} = -\frac{1}{4}$$

R034)

$$\left(-\frac{1}{4}\right)^{-1} = \left(-\frac{4}{1}\right)^1 = -\frac{4}{1} = -4$$

R035)

$$\left(\frac{2}{3}\right)^{-3} = \left(\frac{3}{2}\right)^3 = \frac{3^3}{2^3} = \frac{3 \cdot 3 \cdot 3}{2 \cdot 2 \cdot 2} = \frac{27}{8}$$

R036)

$$\begin{aligned} \left(-\frac{2}{3}\right)^{-3} &= \left(-\frac{3}{2}\right)^3 = \left(-\frac{3}{2}\right) \cdot \left(-\frac{3}{2}\right) \cdot \left(-\frac{3}{2}\right) = \\ &= -\frac{3 \cdot 3 \cdot 3}{2 \cdot 2 \cdot 2} = -\frac{27}{8} \end{aligned}$$

R037)

$$\frac{1}{(-2)^{-3}} = 1 \cdot (-2)^3 = (-2) \cdot (-2) \cdot (-2) = -8$$

R038)

$$\frac{1}{(-3)^{-4}} = 1 \cdot (-3)^4 = (-3) \cdot (-3) \cdot (-3) \cdot (-3) = +81$$

R039)

$$\frac{1}{(-2)^{-5}} = 1 \cdot (-2)^5 = (-2) \cdot (-2) \cdot (-2) \cdot (-2) \cdot (-2) = -32$$

R040)

$$(2xy^2)^3 = 2^3 \cdot x^3 \cdot y^{2 \cdot 3} = 8x^3y^6$$

R041)

$$\begin{aligned} (3xy^2) \cdot (2x^2y^3) &= \\ 3xy^2 \cdot 2x^2y^3 &= \\ 3 \cdot 2 \cdot x \cdot x^2 \cdot y^2 \cdot y^3 &= \\ 6 \cdot x^{1+2} \cdot y^{2+3} &= \\ 6x^3 \cdot y^5 & \end{aligned}$$

R042)

$$\begin{aligned} (5ab^2)^2 \cdot (a^2b)^3 &= \\ 5^2 \cdot a^{1 \cdot 2} \cdot b^{2 \cdot 2} \cdot a^{2 \cdot 3} \cdot b^{1 \cdot 3} &= \\ 5^2 \cdot a^2 \cdot b^4 \cdot a^6 \cdot b^3 &= \\ 25 \cdot a^2 \cdot a^6 \cdot b^4 \cdot b^3 &= \\ 25 a^{2+6} \cdot b^{4+3} &= \\ 25 a^8 b^7 & \end{aligned}$$

R043)

$$\frac{9x^2y^3}{-3xy} = -\frac{3^2x^2y^3}{3xy} =$$

$$3^2 \cdot 3^{-1} \cdot x^2 \cdot y^3 \cdot x^{-1} \cdot y^{-1} =$$

$$3^{2-1} \cdot x^{2-1} \cdot y^{3-1} = 3^1 \cdot x^1 \cdot y^2 = 3xy^2$$

R044)

$$\left(\frac{16ab^4}{-8a^2b^7}\right)^{-3} = \left(\frac{-8a^2b^7}{16ab^4}\right)^3 = \left(\frac{-2^3 \cdot a^2 \cdot b^7}{2^4 \cdot a \cdot b^4}\right)^3 =$$

$$-\left(\frac{2^{3 \cdot 3} \cdot a^{2 \cdot 3} \cdot b^{7 \cdot 3}}{2^4 \cdot a^1 \cdot b^{4 \cdot 3}}\right) = -\frac{2^9 \cdot a^6 \cdot b^{21}}{2^4 \cdot a^3 \cdot b^{12}} =$$

$$-2^9 \cdot 2^{-4} \cdot a^6 \cdot a^{-3} \cdot b^{21} \cdot b^{-12} =$$

$$-2^{9-4} \cdot a^{6-3} \cdot b^{21-12} = -2^5 a^3 b^9$$

R045)

$$\frac{3^{n+2} - 3^n}{3^{n+1} + 3^{n-1}} = \frac{3^n \cdot 3^2 - 3^n}{3^n \cdot 3^1 + 3^n \cdot 3^{-1}} =$$

$$\frac{3^n(3^2 - 1)}{3^n(3^1 + 3^{-1})} = \frac{\cancel{3^n} \cdot 9 - 1}{\cancel{3^n} \cdot 3 + \frac{1}{3}} = \frac{9}{\frac{9+1}{3}} =$$

$$\frac{9}{\frac{10}{3}} = 9 \cdot \frac{3}{10} = \frac{27}{10}$$

R046)

$$\frac{2^{2m+1} - 4^m}{2^{2m}} = \frac{2^{2m} \cdot 2^1 - 2^{2m}}{2^{2m}} = \frac{2^{2m}(2-1)}{2^{2m}} =$$

$$\frac{2^{2m}}{2^{2m}} \cdot (2-1) = 2-1=1 //$$

R047)

$$\frac{2^{n+1} - 2^{n-2}}{2^n} = \frac{2^n \cdot 2^1 - 2^n \cdot 2^{-2}}{2^n} =$$

$$\frac{2^n(2^1 - 2^{-2})}{2^n} = \frac{\cancel{2^n}}{\cancel{2^n}} \cdot (2 - \frac{1}{2}) =$$

$$\frac{4-1}{2} = \frac{3}{2}$$

R048)

$$\left(\frac{3}{4}\right)^5 \cdot (0,75)^{-2} = \frac{3^5}{4^5} \cdot \left(\frac{75}{100}\right)^{-2} =$$

$$\frac{3^5}{4^5} \cdot \frac{100^2}{75^2} = \frac{3^5}{4^5} \cdot \frac{(2^2 \cdot 5^2)^5}{(5^2 \cdot 3)^5} = \frac{\cancel{3^5} \cdot 2^{10} \cdot \cancel{5^{10}}}{\cancel{5^{10}} \cdot \cancel{3^5}} = 2^{10}$$

$$= 1024$$

R049)

$$\frac{5^{m+2}}{5^{m-1}} = \frac{\cancel{5^m} \cdot 5^2}{\cancel{5^m} \cdot 5^{-1}} = 5^2 \cdot 5^1 = 5^3$$

R050)

$$\frac{\left(\frac{1}{2}\right)^3 \cdot 2^4}{\left(\frac{1}{2^2}\right)^3} = \frac{\frac{1}{2^3} \cdot 2^4}{\frac{1}{2^2}} = \frac{2^4}{2^3} \cdot 2^2 = 2^4 \cdot 2^2 \cdot 2^{-3} =$$

$$2^{4+2-3} = 2^3 = 8$$

R051)

$$\frac{2^{m+1} \cdot 2^{m+2}}{4^{m-1}} = \frac{2^m \cdot 2^1 \cdot 2^m \cdot 2^2}{2^{2(m-1)}} = \frac{2^{2m} \cdot 2^3}{2^{2m-2}} =$$

$$\frac{2^{2m} \cdot 2^3}{2^{2m} \cdot 2^{-2}} = 2^3 \cdot 2^2 = 2^5 = 32$$

R052)

$$(0,25)^{-1} \cdot \left(\frac{1}{4}\right)^3 = \left(\frac{25}{100}\right)^{-1} \cdot \left(\frac{1}{2^2}\right)^3 =$$

$$\frac{100}{25} \cdot \frac{1}{2^{2 \cdot 3}} = \frac{2^2 \cdot \cancel{5^2}}{\cancel{5^2}} \cdot \frac{1}{2^6} = \frac{2^2}{2^6} = 2^2 \cdot 2^{-6} = 2^{-4}$$

$$\frac{1}{2^4} = \frac{1}{16}$$