

TAREFA BASICA

01. Sabendo-se que $[(3^5)^2 \cdot 3^{5^2}] : (3^3)^2 = 3^a$.

A. $a = 10$

B. $a = 14$

C. $a = 19$

D. $a = 24$

X E. $a = 29$

$$[3^{10} \cdot 3^{25}] : 3^6 = 3^{29}$$

02. O valor Simplificando-se a Expressão

$[2^9 : (2^2 \cdot 2^3)]^{-3}$, obtém-se:

A. 2^{36}

B. 2^{-36}

C. 2^{-6}

X D. 1

E. $\frac{1}{3}$

$$[2^9 : (2^2 \cdot 2^3)]^{-3} = [2^9 : 2^5]^{-3} = [2^4]^{-3} = 2^{-12}$$

03. O valor numérico da expressão ab^a para $a = 1000$, $b = 100$ e $x = 0,4$ é:

A. $10 \cdot (100^{2,4})$

B. 1040

X C. $10^{3,8}$

D. $10^{0,4}$

E. $100^{3,8}$

$$1000 \cdot 100^{0,4}$$

$$10^3 \cdot 10^{0,4}$$

$$10^3 \cdot 10^{0,8}$$

$$10^3 \cdot 10^{0,8} = 10^{3,8}$$

04. A metade de 4^{22} é:

A. 2^{11}

X E. 2^{43}

B. 2^{22}

C. 2^{44}

D. 4^{21}

$$4^{22} : 2 = (2^2)^{22} : 2 = 2^{44} : 2 = 2^{43}$$

05. Calculando $(0.1) \cdot (0.001) \cdot 10^{-1}$, obtemos:

$$10 \cdot (0.0001)$$

$$\frac{10^{-1} \cdot 10^{-3} \cdot 10^{-1}}{10 \cdot 10^{-4}} = \frac{10^{-5}}{10^{-3}} = 10^{-2}$$

- A. 10^{-1}
 B. 10^{-2}
 C. 10^2
 D. 10^3
 E. 10^4

06. Efectuando a divisão $e^x : e^{x-2}$, teremos:

$$e^x : e^{x-2} = e^{x-(x-2)} = e^{x-x+2} = e^2$$

- A. e^{-2}
 B. e^{x^2-2x}
 C. e^2
 D. $e^{\frac{1}{x-2}}$
 E. e^{2x}

07. Se $7^{5y} = 243$, o valor 7^{-y} é

$$\begin{array}{r} 243 \overline{) 3} \\ 81 \overline{) 3} \\ 27 \overline{) 3} \\ 9 \overline{) 3} \\ 3 \overline{) 3} \\ 1 \end{array}$$

A. $\frac{1}{3}$

$$\begin{aligned} 7^{5y} &= 243 \\ (7^y)^5 &= 3^5 \\ 7^y &= 3 \end{aligned}$$

B. $\frac{1}{6}$

C. $\frac{1}{15}$

D. $\frac{1}{30}$

E. $\frac{1}{3}$

$$7^{-y} = \left(\frac{1}{7^y}\right) = \frac{1^y}{7^y} = \frac{1}{3}$$

08. (MACK) Se $S^x = m$ e $S^y = n$, $(0.04)^{-x+2y}$ vale

$$0.04 = \frac{4}{100} = \frac{2^2}{10^2} = \left(\frac{1}{5}\right)^2$$

$$(S^2)^{-x+2y} = S^{2x-4y} =$$

$$S^{2x} : S^{4y} =$$

$$(S^x)^2 : (S^y)^4 = m^2 \cdot n^{-4}$$

- A. $m^{-2} \cdot n^{-4}$
 B. $m^{\frac{1}{2}} \cdot n^{-4}$
 C. $m^2 \cdot n^{\frac{1}{4}}$
 D. $m^{-2} \cdot n^4$
 E. $m^2 \cdot n^{-4}$

09. (UEL) Se x e y são números reais, então

A. $(3^x)^y = 3x^y$ $(3^x)^y = 3^y$ F

X B. $(2^x \cdot 3^y)^2 = 2^{2x} \cdot 3^{2y}$ $(2^{2x}) \cdot 3^{2y}$

C. $(2^x - 3^y)^y = 2^{xy} - 3^{xy} = -1$ F

D. $5^x + 3^x = 8^x$ F

E. $3 \cdot 2^x = 6^x$ F

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