

Raccolta di espressioni con le proprietà delle potenze

Solved expressions with raise to a power properties

Potencias

Expression et propriété des puissances

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1. $(3^2 \cdot 3^5 \cdot 3^3) : (3^3 \cdot 3)^2 =$ [9]
2. $10^{16} : 10^8 : 10^4 =$ [10⁴]
3. $(2^2)^4 \cdot 2^2 =$ [1024]
4. $5 \cdot 5^8 \cdot 5^4 : 5^{11} =$ [25]
5. $(2^3)^5 : (2^3)^4 =$ [8]
6. $5^4 \cdot 2^4 =$ [10⁴]
7. $28^2 : 4^2 =$ [49]
8. $(7^2 : 7)^3 \cdot (7^2 \cdot 7^4)^2 : (7^5 \cdot 7^2)^2 =$ [7]
9. $(3^3)^4 \cdot (3^6 : 3^2)^3 : (3^3 \cdot 3^6)^2 : 3^4 =$ [9]
10. $9^0 \cdot 0^6 + 15^1 \cdot 2^0 + 3^1 - 24^4 : 12^4 + 5^0 =$ [3]
11. $\{[(3^4 : 3^2 \cdot 5 - 2^5 : 2^2 \cdot 2^2 - 1) : 2^2 + (4^3 : 4^2 + 3^6 : 3^4 - 1) : 3] : 7\}^3 - 3^5 : 3^5 =$ [0]
12. $[(2^4 \cdot 2^5) : (2^2)^2 + (3^3 \cdot 3^6) : (3^4)^2] : 7 + (21 - 11^3 : 11^2) : 5 + 3 \cdot 3^0 - (3^2)^2 : 3^3 =$ [7]
13. $4^7 : 4^5 + 3^2 \cdot 6^2 : 6^2 + 12^4 : 12^3 - (5^4)^3 : 5^{10} =$ [12]
14. $\{3^4 : 3^2 \cdot 5 + 6^5 : 6^2 \cdot [3^2 - 2^2 \cdot (3^2 \cdot 2 - 2^4)] - 7^2\} : (2^2 \cdot 5^2 + 2^3 \cdot 3 \cdot 5 - 8) =$ [1]
15. $(13^4 : 13^2)^3 \cdot (13^2 \cdot 13)^2 : (13^2 \cdot 13^3)^2 =$ [169]



Soluzioni

$$\begin{aligned} & \text{-----} \\ & (3^2 \cdot 3^5 \cdot 3^3) : (3^3 \cdot 3)^2 = \\ & = (3^{2+5+3}) : (3^{3+1})^2 = \\ & = 3^{10} : (3^4)^2 = \\ & = 3^{10} : 3^{4 \cdot 2} = \\ & = 3^{10} : 3^8 = \\ & = 3^{10-8} = 3^2 = \mathbf{[9]} \end{aligned}$$

$$\begin{aligned} & \text{-----} \\ & 10^{16} : 10^8 : 10^4 = \\ & = 10^{16-8-4} = 10^4 = \mathbf{[10000]} \end{aligned}$$

$$\begin{aligned} & \text{-----} \\ & (2^2)^4 \cdot 2^2 = \\ & = 2^{4 \cdot 2} \cdot 2^2 = \\ & = 2^8 \cdot 2^2 = \\ & = 2^{8+2} = 2^{10} = \mathbf{[1024]} \end{aligned}$$

$$\begin{aligned} & \text{-----} \\ & 5 \cdot 5^8 \cdot 5^4 : 5^{11} = \\ & = 5^{1+8+4} : 5^{11} = \\ & = 5^{13} : 5^{11} = \\ & = 5^{13-11} = 5^2 = \mathbf{[25]} \end{aligned}$$

$$\begin{aligned} & \text{-----} \\ & (2^3)^5 : (2^3)^4 = \\ & = 2^{3 \cdot 5} : 2^{3 \cdot 4} = \\ & = 2^{15} : 2^{12} = \\ & = 2^{15-12} = 2^3 = \mathbf{[8]} \end{aligned}$$

$$\begin{aligned} & \text{-----} \\ & 5^4 \cdot 2^4 = (5 \cdot 2)^4 = 10^4 = \mathbf{[10000]} \end{aligned}$$

$$\begin{aligned} & \text{-----} \\ & 28^2 : 4^2 = (28 : 4)^2 = 7^2 = \mathbf{[49]} \end{aligned}$$

$$\begin{aligned} & \text{-----} \\ & (7^2 : 7)^3 \cdot (7^2 \cdot 7^4)^2 : (7^5 \cdot 7^2)^2 = \\ & = (7^{2-1})^3 \cdot (7^{2+4})^2 : (7^{5+2})^2 = \\ & = (7^1)^3 \cdot (7^6)^2 : (7^7)^2 = \\ & = 7^{1 \cdot 3} \cdot 7^{6 \cdot 2} : 7^{7 \cdot 2} = \\ & = 7^3 \cdot 7^{12} : 7^{14} = \\ & = 7^{3+12} : 7^{14} = \\ & = 7^{15-14} = 7^1 = \mathbf{[7]} \end{aligned}$$



$$\begin{aligned}
 & (3^3)^4 \cdot (3^6 : 3^2)^3 : (3^3 \cdot 3^6)^2 : 3^4 = \\
 & = 3^{3 \cdot 4} \cdot (3^{6-2})^3 : (3^{3+6})^2 : 3^4 = \\
 & = 3^{12} \cdot (3^4)^3 : (3^9)^2 : 3^4 = \\
 & = 3^{12} \cdot 3^{4 \cdot 3} : 3^{9 \cdot 2} : 3^4 = \\
 & = 3^{12} \cdot 3^{12} : 3^{18} : 3^4 = \\
 & = 3^{12+12-18-4} = 3^2 = \mathbf{[9]}
 \end{aligned}$$

$$\begin{aligned}
 & 9^0 \cdot 0^6 + 15^1 \cdot 2^0 + 3^1 - 24^4 : 12^4 + 5^0 = \\
 & = 1 \cdot 0 + 15 \cdot 1 + 3 - (24:12)^4 + 1 = \\
 & = 15 + 3 - 2^4 + 1 = \\
 & = 18 - 16 + 1 = \\
 & = 2 + 1 = \mathbf{[3]}
 \end{aligned}$$

$$\begin{aligned}
 & \{[(3^4 : 3^2 \cdot 5 - 2^5 : 2^2 \cdot 2^2 - 1) : 2^2 + (4^3 : 4^2 + 3^6 : 3^4 - 1) : 3] : 7\}^3 - 3^5 : 3^5 = \\
 & = \{[(3^{4-2} \cdot 5 - 2^{5-2} \cdot 2^2 - 1) : 2^2 + (4^{3-2} + 3^{6-4} - 1) : 3] : 7\}^3 - 3^{5-5} = \\
 & = \{[(3^2 \cdot 5 - 2^3 \cdot 4 - 1) : 2^2 + (4^1 + 3^2 - 1) : 3] : 7\}^3 - 3^0 = \\
 & = \{[(9 \cdot 5 - 8 \cdot 4 - 1) : 2^2 + (4 + 9 - 1) : 3] : 7\}^3 - 1 = \\
 & = \{[(45 - 32 - 1) : 2^2 + (13 - 1) : 3] : 7\}^3 - 1 = \\
 & = \{[12 : 4 + 12 : 3] : 7\}^3 - 1 = \\
 & = \{[3 + 4] : 7\}^3 - 1 = \\
 & = \{7 : 7\}^3 - 1 = \\
 & = 1^3 - 1 = \mathbf{[0]}
 \end{aligned}$$

$$\begin{aligned}
 & [(2^4 \cdot 2^5) : (2^2)^2 + (3^3 \cdot 3^6) : (3^4)^2] : 7 + (21 - 11^3 : 11^2) : 5 + 3 \cdot 3^0 - (3^2)^2 : 3^3 = \\
 & = [2^{4+5} : 2^{2 \cdot 2} + 3^{3+6} : 3^{4 \cdot 2}] : 7 + (21 - 11^{3-2}) : 5 + 3 \cdot 1 - 3^{2 \cdot 2} : 3^3 = \\
 & = [2^9 : 2^4 + 3^9 : 3^8] : 7 + 21 - 11^1 : 5 + 3 \cdot 1 - 3^4 : 3^3 = \\
 & = [2^{9-4} + 3^{9-8}] : 7 + (21 - 11) : 5 + 3 \cdot 1 - 3^{4-3} = \\
 & = [2^5 + 3^1] : 7 + 10 : 5 + 3 \cdot 1 - 3^1 = \\
 & = [32 + 3] : 7 + 2 + 3 \cdot 1 - 3^1 = \\
 & = 35 : 7 + 2 + 3 - 3 = \\
 & = 5 + 2 = \mathbf{[7]}
 \end{aligned}$$

contributo di Andrea D.

$$\begin{aligned}
 & 4^7 : 4^5 + 3^2 \cdot 6^2 : 6^2 + 12^4 : 12^3 - (5^4)^3 : 5^{10} = \\
 & = 4^{7-5} + (3 \cdot 6 : 6)^2 + 12^{4-3} - 5^{12} : 5^{10} = \\
 & = 4^2 + 3^2 + 12^1 - 5^2 = \\
 & = 16 + 9 + 12 - 25 = \\
 & = 25 + 12 - 25 = \mathbf{[12]}
 \end{aligned}$$


$$\begin{aligned}
 & \{3^4 : 3^2 \cdot 5 + 6^5 : 6^2 \cdot [3^2 - 2^2 \cdot (3^2 \cdot 2 - 2^4)] - 7^2\} : (2^2 \cdot 5^2 + 2^3 \cdot 3 \cdot 5 - 8) = \\
 & = \{3^{4-2} \cdot 5 + 6^{5-2} \cdot (15 - 9) \cdot [9 - 4 \cdot (18 - 16)] - 49\} : (10^2 + 120 - 8) = \\
 & = \{3^2 \cdot 5 + 6^3 \cdot [9 - 4 \cdot 2] - 49\} : (100 + 120 - 8) = \\
 & = \{9 \cdot 5 + 216 \cdot [9 - 8] - 49\} : (220 - 8) = \\
 & = \{45 + 216 - 49\} : 212 =
 \end{aligned}$$






$$\begin{aligned} &= \{261 - 49\} : 212 = \\ &= 212 : 212 = \mathbf{[1]} \end{aligned}$$

$$\begin{aligned} &= \text{-----} \\ &(13^4 : 13^2)^3 \cdot (13^2 \cdot 13)^2 : (13^2 \cdot 13^3)^2 = \\ &= (13^{4-2})^3 \cdot (13^{2+1})^2 : (13^{2+3})^2 = \\ &= (13^2)^3 \cdot (13^3)^2 : (13^5)^2 = \\ &= 13^{2 \cdot 3} \cdot 13^{3 \cdot 2} : 13^{5 \cdot 2} = \\ &= 13^6 \cdot 13^6 : 13^{10} = \\ &= 13^{6+6} : 13^{10} = \\ &= 13^{12-10} = 13^2 = \mathbf{[169]} \\ &= \text{-----} \end{aligned}$$


Keywords

 *Matematica, Aritmetica, espressioni, addizioni, sottrazioni, moltiplicazioni, divisioni, elevamento a potenza, base, esponente, potenza, proprietà delle potenze*

  *Math, Arithmetic, Expression, Arithmetic Operations, Raise to a Power, base, exponent, power, Solved expressions with raise to a power*

 *Matemática, Aritmética, potencia, expresiones, potencias, propiedades de las potencias, Potencias y expresiones,*

 *Mathématique, Arithmétique, Expression, Exercices de calcul et expression avec des puissances, propriété des puissances*

 *Mathematik, Arithmetik, Potenz, Rechenregeln, Allgemeinere Basen, Allgemeinere Exponenten*



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