

Matemáticas virtuales

¡Hacemos fácil, lo difícil!

Solución de ejercicios de potencia de números enteros:

Fecha de publicación del enunciado de los ejercicios: 24/06/2012

$$\begin{aligned} 1) & (-2)^5 \times (-2)^4 \times (-2) \\ &= (-2)^{5+4+1} \\ &= (-2)^{10} \\ &= 1024 \end{aligned}$$

$$\begin{aligned} 2) & [(-3)^2]^3 \\ &= (-3)^{2 \times 3} \\ &= (-3)^6 \\ &= 729 \end{aligned}$$

$$\begin{aligned} 3) & (2^3)^2 \times (2^5)^2 \\ &= 2^{3 \times 2} \times 2^{5 \times 2} \\ &= 2^6 \times 2^{10} \\ &= 2^{6+10} \\ &= 2^{16} \\ &= 65536 \end{aligned}$$

$$\begin{aligned} 4) & (-6)^8 \div (-6)^3 \\ &= (-6)^{8-3} \\ &= (-6)^5 \\ &= -7776 \end{aligned}$$

$$\begin{aligned} 5) & [4^6 \times 4^4 \times 4^8] \div [4^{12} \times 4] = \\ &= 4^{6+4+8} \div 4^{12+1} \\ &= 4^{18} \div 4^{13} \\ &= 4^{18-13} \\ &= 4^5 = 1024 \end{aligned}$$

$$\begin{aligned} 6) & 2^{3^2} \times 2^{2^3} \\ &= 2^9 \times 2^8 \\ &= 2^{9+8} \\ &= 2^{17} \\ &= 131072 \end{aligned}$$

$$7) (-2)^2 \times [(-2)^2]^3 \times (-2)$$

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$$\begin{aligned} &= (-2)^2 \times (-2)^6 \times (-2) \\ &= (-2)^{2+6+1} \\ &= (-2)^9 \\ &= -512 \end{aligned}$$

$$\begin{aligned} 8) & [(2^2)^3 \times 2^{4^2} \times (2^3)^2] \div [2^{2^4} \times 2^3 \times 2] \\ &= [2^6 \times 2^{16} \times 2^6] \div [2^{16} \times 2^3 \times 2] \\ &= 2^{28} \div 2^{20} \\ &= 2^8 \\ &= 256 \end{aligned}$$

$$\begin{aligned} 9) & [3^8 \times 6^9 \times 5^5] \div [3^6 \times 6^8 \times 5^2] \\ &= 3^{8-6} \times 6^{9-8} \times 5^3 \\ &= 3^2 \times 6 \times 5^3 \\ &= 9 \times 6 \times 125 \\ &= 6750 \end{aligned}$$

$$\begin{aligned} 10) & [2^7 \times 3^5] \times [2^4 \times 3^4] \\ &= 2^3 \times 3 \\ &= 8 \times 3 \\ &= 24 \end{aligned}$$

$$\begin{aligned} 11) & [6^5 \times 7^5 \times 9^9] \div [6^3 \times 7^5 \times 9^8] \\ &= 6^{5-3} \times 7^{5-5} \times 9^{9-8} \\ &= 6^{5-3} \times 7^0 \times 9 \\ &= 6^2 \times 1 \times 9 \\ &= 36 \times 9 \\ &= 324 \end{aligned}$$

$$\begin{aligned} 12) & [2^9 \times 3^{10} \times 5^7] \div [2^6 \times 3^9 \times 5^4] \\ &= 2^{9-6} \times 3^{10-9} \times 5^{7-4} \\ &= 2^3 \times 3 \times 5^3 \\ &= 8 \times 3 \times 125 \\ &= 3000 \end{aligned}$$

$$\begin{aligned} 13) & [6^4 \times 4^5] \div [3^4 \times 2^5] \\ &= [(2 \times 3)^4 \times (2^2)^5] \div [3^4 \times 2^5] \\ &= [2^4 \times 3^4 \times 2^{10}] \div [3^4 \times 2^5] \end{aligned}$$

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$$\begin{aligned} &= 2^{4+10} \times 3^4 \div 3^4 \times 2^5 \\ &= 2^{14} \times 3^4 \div 3^4 \times 2^5 \\ &= 2^{14-5} \times 3^{4-4} \\ &= 2^9 \times 3^0 \\ &= 512 \end{aligned}$$

$$\begin{aligned} 14) & [18^3 \times 8^3] \div 36^3 \\ &= [(18 \times 8) \div 36]^3 \\ &= 4^3 \\ &= 64 \end{aligned}$$

$$\begin{aligned} 15) M &= [(-2)^{27} + (-2)^7] \div [(-2)^{23} + (-2)^3] \\ &= (-2)^7 \times [(-2)^{20} + 1] \div (-2)^3 \times [(-2)^{20} + 1] \\ &= (-2)^{7-3} \\ &= (-2)^4 \\ &= 16 \end{aligned}$$