Ejercicios aplicando leyes de los exponentes

1. $2^3 = 8$ $(2)(2)(2) = 8$
2. $(-2)^3 = -8$
3. $7^2 7^0 = 49$
4. $2^0 (5)^2 = 25$
5. $2 (2^5) = 64$
6. $5^0 (3^0) = 1$
7. $(2)^3 = 8$
8. $3^4 = 81$
9. $(-3)^4 = 81$
10. $(-3)^3 = -27$
11. $(-5)^2 = 25$
12. $(-3)^2 - (-2)^3 = 17$ $9 + 8$
13. $3 (5^2) 2^0 = 75$
14. $(5^4)^0 = 1$
15. $7^4 17^2 = 58.5609$
16. $8^7 18^4 = 512$
17. $(3^2)^3 =$ 729
18. $32 (4^{-2}) = 2$ $32\left(\frac{1}{4^2}\right) = \frac{32}{16}\left(\frac{1}{16}\right) = \frac{32}{16} = 2$
19. $125(5^{-3}) = 1$ $(5^{-3}) = \frac{1}{5^3} \frac{125}{1} = \frac{125}{5^3} = \frac{125}{125} = 1$

Ejercicios aplicando leyes de los exponentes

20 $18(6^{-1}) = 3$ $\frac{18}{6} = \frac{18}{6} = 3$

21 $3^2 3^3 = 243$ $(9)(27) = 243$

22 $m^{-4}m^{-3} = m^{-7}$ $m^{(-4)+(-3)} = m^{-4-3} = m^{-7}$

23 $(-3)^2 = 9$ $(-3)(-3) = 9$

24 $2^9 / 2^4 = 32$ $512/16 = 32$

25 $W^7 w^{-2} =$ $w^{7+(-2)} = w^{7-2} = w^5$

26 $3^2 (3^3) = 243$ $9(27) = 243$

27 $5^5 / 5^7 = 0.04$ $3{,}125 / 78{,}125 = 0.04$

28 $W^4 w^6 =$ $w^{4+6} = w^{10}$

29 $-(5)^2 = -25$ $-5^2 = -25$

30 $-(-3)^2 = 9$ $-1(-3)^2 = (3)^2 = 9$

31 $(-1)^{105} = -1$

32 $(567)^0 = 1$

33 $(1)^{640} = 1$

34 $(-8 + 8)^{45} =$ $(-8+8)^{45} = 0^{45} = 0$

35 $(m^6 n^4 p^3)^2 = m^{12} n^8 p^3$

36 $x^{12} y^5 z^3 / x^{12} y^2 z = X$

$\frac{x^{12} y^5 z^3}{x^{12} y^2 z} = x^{12-12} y^{5-2} z^{3-1} \Rightarrow x^0 y^3 z^2$

$= y^3 z^2$

$(a^{1/n})^m = a^{m/n}$

Ejemplos:

37 $2^{3/4} = \sqrt[4]{2^3}$

38 $\sqrt[4]{2^3} = 2^{3/4}$

39 $16^{1/2} = \sqrt{16}$

40 $\sqrt{16} = 16^{1/2}$

41 $a^{1/2} = \sqrt{a}$

42 $\sqrt{a} = a^{1/2}$

43 $x^{5/9} = \sqrt[9]{x^5}$

44 $\sqrt[9]{x^5} = x^{5/9}$

45 $8^{2/3} = \sqrt[3]{8^2}$

46 $27^{1/3} = \sqrt[3]{27}$

47 $b^{3/4} = \sqrt[4]{b^3}$

48 $m^{2/5} = \sqrt[5]{m}$

Ejercicios

1.- Escribe los siguientes números en forma exponencial

49 $\sqrt[3]{5} = 5^{1/2}$

50 $\sqrt{7} = 7^{1/2}$

51 $\sqrt[3]{8} = 8^{1/3}$

52 $\sqrt[4]{25} = 25^{1/4}$

53 $\sqrt{4^3} = 4^{3/2}$

54 $\sqrt[3]{27} = 27^{1/3}$

55 $\sqrt[3]{2^5} = 2^{5/3}$

56 $\sqrt[5]{3^2} = 3^{2/5}$

2.- Escribe los siguientes números en forma radical

57 $4^{1/2} = 4$

58 $64^{1/3} = \sqrt[3]{64}$

59 $10^{3/5} = \sqrt[5]{10^3}$

60 $32^{1/5} = \sqrt[5]{32}$

61 $7^{3/4} = \sqrt[4]{7^3}$

62 $14^{3/2} = \sqrt{14^3}$

63 $2^{5/4} = \sqrt[4]{2^5}$

64 $16^{1/2} = \sqrt{16}$

3.- Efectúa las siguientes expresiones

65 $\sqrt{81} - 3^3 - 6^0 =$ $9 - 27 - 1 = -19$

66 $\sqrt{64} + (-3)^2 - (6)^2 =$ $8 + 9 - 36 = -19$

67 $\sqrt{36} - 2^3 - 10^0 =$ $6 - 8 - 1 = -3$

68 $\sqrt[3]{8} - 4^2 - (2)^0 =$ $2 - 16 - 1 = 2 - 17 = -15$

69 $\sqrt[3]{27} - (-5) + (-6) =$ $3 + 5 - 6 = 2$

70 $49^{1/2} + (-10) - (5) =$ $\sqrt{49} - 10 - 5 = 7 - 10 - 5 = -8$

71 $64^{1/3} - 81^{1/2} =$
$\sqrt[3]{64} - \sqrt{81} = 24 - 9 = 15$

72 $25^{1/2} - 27^{1/3} - (-2) + (-1) =$
$\sqrt{25} - \sqrt[3]{27} + 2 - 1 = 5 - 3 + 2 - 1 = 3$

73 $4^{1/2} - 64^{1/3} + 125^{1/2} - 64^{1/2} =$
$\sqrt{4} - \sqrt[3]{64} + \sqrt{125} - \sqrt{64} = 2 - 4 + 5 - 8 = -5$

74 $8^{2/3} + (-8)^{1/3} + 8^0 =$
$\sqrt[3]{8} - \sqrt[3]{8} + 1 = 2 + 1 = 3$

75 $(-8)^{1/3} + 36^{1/2} - (-2) =$ $\sqrt[3]{-8} + \sqrt{36} + 2 = +2 + 6 + 2 = -4 + 2 = -10$