

BC Math 9 Exponents 2 (solutions)

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1. 3^4
 81

2. Simplify $(p)(p)(p)(p)$
 p^4

3. $2^0 + 1^0$
 $1 + 1 = 2$

4. $\frac{0}{1} + 0^1$
 $0 + 0 = 0$

5. $(-2)^{10} - 2^{10}$
 $1024 - 1024 = 0$

6. $(x^5)(x)(x^3)$
 x^9

7. $(5x^4)^2$
 $25x^8$

8. $\left(\frac{-3}{5}\right)^2$
 $9/25$

9. $\left(\frac{x}{3y^3}\right)^3$
 $\frac{x^3}{27y^9}$

10. $(-1)^{200} - (-1)^{225}$
 $1 - (-1) = 2$

11. $\left(\frac{x^{10}}{x^3} \times x\right)^2$
 x^{16}

12. $\frac{a^6}{a} \div \frac{a^3}{a^5}$
 $a^5 \times \frac{a^5}{a^3} = a^7$

13. $\frac{(-2)^{50}}{(-2)^{47}}$
 $(-2)^3 = -8$

14. $\frac{(-3)^{1000}}{-3^{998}}$
 $-3^2 = -9$

$$15. 3(+3)^3 + (-1)^3 \\ = 81 - 1 = 80$$

$$16. \frac{5ab^3c}{15a^3b^5} \\ \frac{c}{3a^2b^2}$$

$$17. ((3x^3)^2)^2 \\ 81x^{12}$$

$$18. a^2 \left(\frac{4ab^5}{6a^5b^3c^4} \right)^2 \\ = a^2 \left(\frac{2b^2}{3a^4c^4} \right)^2 = a^2 \times \frac{4b^4}{9a^8c^8} = \frac{4b^4}{9a^6c^8}$$

$$19. -\left(-\frac{2}{3}\right)^2 - (-2)^3 - \left(\frac{(-3)^5}{-3^4}\right)^2 \\ -\frac{4}{9} + 8 - 9 = -\frac{13}{9}$$

$$20. \text{Solve } 27 = 9^{3x} \\ 3^3 = (3^2)^{3x} \\ 3 = 6x \\ \frac{1}{2} = x$$

$$21. \text{Solve } 2^{1-2x} = \frac{2^9}{2^x} \\ 2^{1-2x} = 2^{9-x} \\ 1 - 2x = 9 - x \\ -8 = x$$