

Multiplying Powers with the Same Base Assignment

Simplify the following expressions.

1. $z^2 \times z^9$

2. $4^2 \times 4$

3. $2^3 \times 2^0 \times 2^{-1}$

4. $x^5 \times x^3 \times x^{-2}$

5. $x^2y \times x^2y^3$

6. $a^5b^3 \times a^{-2}b^3$

7. $5^2x^3 \times 5x^2$

8. $2b^3 \times 2^3b^4$

9. $2ab^2 \times 2a^2b$

10. $3x^2y \times 3xy^2$

Multiplying Powers with the Same Base Assignment

Evaluate the following using properties of powers.

11. $(2x^2)(3x^3)$

12. $(3ab)(5ab)$

13. $(5a^2b^3c)(6ab^2c^7)$

14. $(3x^2)(5xy^3)$

15. $(2z)(4xz^2)(3x^3)$

16. $(5gh^3)(2g^2h^5)(3g^3h)$

17. $(2a^2b)(6ab^{-3})(5a^{-2}b)$

18. $(3g)(12^{-1}g^3)(2g^{-1})$

19. $(3a^2b^0)(21^0ab^3)(12^{-1}a^{-4})$

20. $(x^2y^{-3}z)(3xyz^{-2})(4xy^2z^3)$

Multiplying Powers with the Same Base Assignment

Answer:

Simplify the following expressions.

1. $z^2 \times z^9 = z^{11}$

3. $2^3 \times 2^0 \times 2^{-1} = 2^2 = 4$

5. $x^2 y \times x^2 y^3 = x^4 y^4$

7. $5^2 x^3 \times 5x^2 = 5^3 x^5 = 125x^5$

9. $2ab^2 \times 2a^2b = 2^2 a^3 b^3 = 4a^3 b^3$

2. $4^2 \times 4 = 4^3$

4. $x^5 \times x^3 \times x^{-2} = x^6$

6. $a^5 b^3 \times a^{-2} b^3 = a^3 b^6$

8. $2b^3 \times 2^3 b^4 = 2^4 b^7 = 16b^7$

10. $3x^2 y \times 3xy^2 = 3^2 x^3 y^3 = 9x^3 y^3$

Evaluate the following using properties of powers.

11. $(2x^2)(3x^3) = 6x^5$

13. $(5a^2 b^3 c)(6ab^2 c^7) = 30a^3 b^5 c^8$

15. $(2z)(4xz^2)(3x^3) = 24x^4 z^3$

17. $(2a^2 b)(6ab^{-3})(5a^{-2} b) = 60ab^{-2} = \frac{60a}{b}$

19. $(3a^2 b^0)(21^0 ab^3)(12^{-1} a^{-4}) = 3b^3(12^{-1} a^{-1}) = \frac{3b^3}{12a}$

$$= \frac{b^3}{4a}$$

12. $(3ab)(5ab) = 15a^2 b^2$

14. $(3x^2)(5xy^3) = 15x^3 y^3$

16. $(5gh^3)(2g^2 h^5)(3g^3 h) = 30g^6 h^{11}$

18. $(3g)(12^{-1} g^3)(2g^{-1}) = 6g^3(12^{-1}) = \frac{6g^3}{12} = \frac{g^3}{2}$

20. $(x^2 y^{-3} z)(3xyz^{-2})(4xy^2 z^3) = 12x^4 z^4$