

Exponent Practice

Algebra 2

Rule 1: Multiplying

When the bases match, just add the exponents to multiply the terms.

1. $x^{10} \cdot x^4$
2. $y^{23} \cdot y^7$
3. $a^{11} \cdot a^2 \cdot a^6$
4. $m^{1/2} \cdot m^{1/4}$
5. $k^{-8} \cdot k^5$
6. $w^{3b} \cdot w^{7a}$
7. $c^{12} \cdot d^{-2} \cdot c^{-5} \cdot d^6$

Rule 2: Dividing

When the bases match, just subtract to divide the terms.

8. $\frac{x^8}{x^5}$
9. $\frac{v^{-3}}{v^{-7}}$
10. $\frac{m^{3.5}}{m^{2.1}}$
11. $\frac{b^{3/4}}{b^{1/5}}$
12. $\frac{a^{12}d^3}{a^7d^8}$

Rule 3: Raising a Power to a Power

To raise a power to a power, multiply the exponents.

13. $(a^5)^4$
14. $(b^{-3})^7$
15. $(a^{3.4})^{1.2}$
16. $(a^{3/4})^{1/2}$

Rule 4: Distributing

Distribute the power to each term.

17. $(xy^3)^4$
18. $(3a^2b^3)^2$
19. $\left(\frac{2m^3}{5b^2}\right)^3$

Rule 5: Zero Power

Anything to the zero power equals 1.

20. m^0
21. 1457^0
22. $(x^{34})^0$
23. $(98752 x^{25} y^{75})^0$

Rule 6: Negative Power

A term with a negative power is on the wrong side of the fraction bar. Move it.

24. x^{-3}
25. $\frac{2}{y^{-4}}$
26. $\frac{p^{-3}r^6}{t^{-5}s^{-2}}$
27. $\frac{7g^{-5}}{2h^{-7}j^2}$

Rule 7: Fractional Exponents

The top number is the power. The bottom number is the root.

28. $m^{3/4}$
29. $k^{2/5}$
30. $9^{1/2}$
31. $16^{-3/4}$