

5-1 Practice

Operations with Polynomials

Simplify. Assume that no variable equals 0.

1. $n^5 \cdot n^2$

2. $y^7 \cdot y^3 \cdot y^2$

3. $t^9 \cdot t^{-8}$

4. $x^{-4} \cdot x^{-4} \cdot x^4$

5. $(2f^4)^6$

6. $(-2b^{-2}c^3)^3$

7. $(4d^2t^5v^{-4})(-5dt^{-3}v^{-1})$

8. $8u(2z)^3$

9. $\frac{12m^8y^6}{-9my^4}$

10. $\frac{-6n^5x^3}{18nx^7}$

11. $\frac{-27x^3(-x^7)}{16x^4}$

12. $\left(\frac{2}{3r^2t^3z^6}\right)^2$

13. $-(4w^{-3}z^{-5})(8w)^2$

14. $(m^4n^6)^4(m^3n^2p^5)^6$

15. $\left(\frac{3}{2}d^{-2}f^4\right)^4\left(-\frac{4}{3}d^5f\right)^3$

16. $\left(\frac{2x^3y^2}{-x^2y^5}\right)^{-2}$

17. $\frac{(3x^{-2}y^3)(5xy^{-8})}{(x^{-3})^4y^{-2}}$

18. $\frac{-20(m^2v)(-v)^3}{5(-v)^2(-m^4)}$

19. $(3n^2 + 1) + (8n^2 - 8)$

20. $(6w - 11w^2) - (4 + 7w^2)$

21. $(w + 2t)(w^2 - 2wt + 4t^2)$

22. $(x + y)(x^2 - 3xy + 2y^2)$

23. BANKING Terry invests \$1500 in two mutual funds. The first year, one fund grows 3.8% and the other grows 6%. Write a polynomial to represent the amount Terry's \$1500 grows to in that year if x represents the amount he invested in the fund with the lesser growth rate.

24. GEOMETRY The area of the base of a rectangular box measures $2x^2 + 4x - 3$ square units. The height of the box measures x units. Find a polynomial expression for the volume of the box.