

Simplify. Answer with **positive exponents**.

1. $(-3x^4y)(5x^2y^4)$

2. $(-6x^3y^4)^2$

3. $\frac{-18x^4y^7}{12x^5y^5}$

4. $(-5x^3y)^2(3x^4y^3)$

5. $\frac{5^{-1}x^4y^{-2}}{2^{-3}x^5y^{-2}}$

6. $(4x^{-5}y^4)(-3x^{-2}y^{-1})$

7. $(2x^5y^{-6})(-x^{-2}y^{-2})$

8. $\frac{4x^8y^4}{(2x^3y^3)^3}$

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

10.
$$\frac{(5x^6y^4)^{-2}}{(4x^6y^4)^{-1}}$$

11.
$$\frac{(2x^2y)(3xy)}{(4xy)(x^2y^3)}$$

12.
$$\frac{(2xy^2)^{-3}}{(x^{-2}y)(2xy^{-3})}$$

Write in Scientific Notation

13. .00000142

14. 5,300,000

Expand into decimal form

15. 2.4×10^{-5}

16. 4.3×10^4

Simplify: Perform the indicated operations.

17. $\frac{5}{3}x - \frac{3}{5}x^2 - 3 - \frac{17}{3}x + \frac{13}{5}x^2 - 4x + 2$

18. $-6x^2\left(-2x^2 + 4x - \frac{1}{2}\right)$

19. $-(5x^2 - 2x - 4) - 2x(4x - 3)$

20. $\frac{1}{2}(4x^2 - 6x) - x(2x^2 - 3x - 5)$

21. $(2x+5)(4x-1)$

22. $(2x-1)(3x+1)$

23. $(2x-5)(2x+5)$

24. $(3x-4)(x-6)$

25. $(4x-5)^2$

26. $(3x-1)(4x^2-5x-1)$

27.
$$\frac{10y^4 - 12y^3 + 6y}{12y^3}$$

28.
$$\frac{16x^4 - 3x^2 - 12x}{12x^2}$$

29.
$$\frac{3x^2 + 7x + 1}{3x - 2}$$

30.
$$\frac{4x^3 - 3x + 3}{2x + 1}$$

Factor completely.

31. $12x^2 - 18x$

32. $2x^2 - 18x$

33. $3x^4 + 12x^2$

34. $25x^2 - 9$

35. $16x^2 - 49$

36. $9x^2 + 49$

37. $9x^2 - 36$

38. $x^4 - 81$

39. $x^2 + 8x + 15$

40. $x^2 - 5x - 14$

41. $x^2 - 10x + 25$

42. $2x^2 + 2x - 60$

43. $3x^2 - 21x + 30$

44. $8x^2 - 14x + 3$

45. $2x^2 - 14x + 24$

46. $6x^2 + x - 2$

47. $5x^2 - 3x - 8$

48. $8x^2 - 8x + 2$

Solve for x. Circle your answers:

49. $10x^2 - 6x = 0$

50. $4x^2 = 9$

51. $x^2 - 14x + 49 = 0$

52. $3x^2 - 3x = 18$

53. $3x^2 + 11x - 4 = 0$

54. $4x^2 + 15x - 4 = 0$

Chapter 6 and 7 Test Review Answers

1. $-15x^6y^5$ 2. $36x^6y^8$ 3. $\frac{-3y^2}{2x}$ 4. $75x^{10}y^5$ 5. $\frac{8}{5x}$ 6. $\frac{-12y^3}{x^7}$
7. $\frac{-2x^3}{y^8}$ 8. $\frac{1}{2xy^5}$ 9. $\frac{-16}{x^3}$ 10. $\frac{4}{25x^6y^4}$ 11. $\frac{3}{2y^2}$ 12. $\frac{1}{16x^2y^4}$
13. 1.42×10^{-6} 14. 5.3×10^6 15. $.000024$ 16. $43,000$
17. $2x^2 - 8x - 1$ 18. $12x^4 - 24x^3 + 3x^2$ 19. $-13x^2 + 8x + 4$ 20. $-2x^3 + 5x^2 + 2x$
21. $8x^2 + 18x - 5$ 22. $6x^2 - x - 1$ 23. $4x^2 - 25$ 24. $3x^2 - 22x + 24$
25. $16x^2 - 40x + 25$ 26. $12x^3 - 19x^2 + 2x + 1$ 27. $\frac{5y}{6} - 1 + \frac{1}{2y^2}$ 28. $\frac{4x^2}{3} - \frac{1}{4} - \frac{1}{x}$
29. $x + 3 + \frac{7}{3x-2}$ 30. $2x^2 - x - 1 + \frac{4}{2x+1}$
31. $6x(2x - 3)$ 32. $2x(x - 9)$ 33. $3x^2(x^2 + 4)$ 34. $(5x + 3)(5x - 3)$
35. $(4x - 7)(4x + 7)$ 36. DNF 37. $9(x - 2)(x + 2)$ 38. $(x - 3)(x + 3)(x^2 + 9)$
39. $(x + 5)(x + 3)$ 40. $(x + 2)(x - 7)$ 41. $(x - 5)(x - 5)$ 42. $2(x + 6)(x - 5)$
43. $3(x - 5)(x - 2)$ 44. $(4x - 1)(2x - 3)$ 45. $2(x - 4)(x - 3)$ 46. $(3x + 2)(2x - 1)$
47. $(5x - 8)(x + 1)$ 48. $2(2x - 1)(2x - 1)$
49. $x = 0$ or $x = \frac{3}{5}$ 50. $x = \frac{3}{2}$ or $x = \frac{-3}{2}$ 51. $x = 7$ or $x = 7$ 52. $x = -2$ or $x = 3$
53. $x = \frac{1}{3}$ or $x = -4$ 54. $x = \frac{1}{4}$ or $x = -4$