

SECTION 5.1

1. a^4b^4 3. $-18x^3y^4$ 5. x^8y^{16} 7. $81x^8y^{12}$ 9. $729a^{10}b^6$ 11. x^5y^{11} 13. $729x^6$ 15. $a^{18}b^{18}$ 17. $4096x^{12}y^{12}$
19. $64a^{24}b^{18}$ 21. x^{2n+1} 23. y^{6n-2} 25. a^{2n^2-6n} 27. x^{15n+10} 29. $-6x^5y^5z^4$ 31. $-12a^2b^9c^2$ 33. $-6x^4y^4z^5$
35. $-432a^7b^{11}$ 37. $54a^{13}b^{17}$ 39. 243 41. y^3 43. $\frac{a^3b^2}{4}$ 45. $\frac{x}{y^4}$ 47. $\frac{1}{2}$ 49. $-\frac{1}{9}$ 51. $\frac{1}{y^8}$ 53. $\frac{1}{x^6y^{10}}$
55. x^5y^5 57. $\frac{a^8}{b^9}$ 59. $\frac{1}{2187a}$ 61. $\frac{y^6}{x^3}$ 63. $\frac{y^4}{x^3}$ 65. $-\frac{1}{2x^2}$ 67. $-\frac{1}{243a^5b^{10}}$ 69. $\frac{16x^8}{81y^4z^{12}}$ 71. $\frac{3a^4}{4b^3}$
73. $-\frac{9a}{8b^6}$ 75. $\frac{16x^2}{y^6}$ 77. $\frac{1}{b^{4n}}$ 79. $-\frac{1}{y^{6n}}$ 81. y^{n-2} 83. $\frac{1}{y^{2n}}$ 85. $\frac{x^{n-5}}{y^6}$ 87. $\frac{8b^{15}}{3a^{18}}$ 89. 4.67×10^{-6}
91. 1.7×10^{-10} 93. 2×10^{11} 95. 0.000000123 97. 8,200,000,000,000,000 99. 0.039 101. 150,000
103. 20,800,000 105. 0.000000015 107. 0.0000000000178 109. 140,000,000 111. 11,456,790
113. 0.000008 115. Light travels 2.592×10^{10} km in one day. 117. The signals traveled at a speed of $1.0\overline{81} \times 10^7$ mi/min. 119. The centrifuge makes one revolution in 6.6×10^{-7} s. 121. The sun is 3.38983×10^5 times heavier. 123. The weight of one orchid seed is 3.225806×10^{-8} oz. 125. The distance from the Coma cluster to Earth is 1.6423949×10^{21} mi.
- 127a. $\frac{8}{5}$ b. $\frac{5}{4}$