

Simplify.

44. $\left(\frac{x}{2}\right)^3$

45. $\left(\frac{a}{b}\right)^4$

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

47. $\left(\frac{x}{3}\right)^{-1}$

48. $\left(\frac{m^{-3}}{n}\right)^0$

49. $\left(\frac{a^{-2}}{b^{-3}}\right)^{-2}$

Simplify.

50. $5m^4 \times 3m^2$

51. $(4ab^4)(-5a^3b^2)$

52. $5a(-2ab^2)(-3b^3)$

53. $(-6m^3n^2)(-4mn^5)$

54. $(7x^2)(6x^{-2})$

55. $(3x^{-2}y^2)(-2x^2y^{-3})$

56. $(-6a^{-1}b^2)(-a^{-3}b^{-4})$

57. $(-10x^4) \div (-2x)$

58. $\frac{45a^2b^4}{9ab^2}$

59. $\frac{(4m^2n^4)(7m^3n)}{14mn^5}$

60. $\frac{3ab^3 \times 10a^4b^2}{15a^2b^6}$

61. $\frac{4a^4b^3}{a^5b^6} \times \frac{-a^3}{-(b^2)}$

62. $(35x^5) \div (5x^{-3})$

63. $(-6m^{-4}n^2) \div (2m^{-1}n^{-6})$

64. $\frac{-54a^5b^{-7}}{-6a^{-2}b^{-3}}$

65. $\frac{(-2x^{-3}y)(-12x^{-4}y^{-2})}{6xy^{-3}}$

Simplify.

66. $(2m^3)^2$

67. $(-4x^2)^3$

68. $(-3m^3n^2)^2$

69. $(5c^{-3}d^3)^{-2}$

70. $(2a^{-3}b^{-2})^{-3}$

71. $(-3x^3y^{-2})^{-4}$

72. $\left(\frac{4x}{3y}\right)^2$

73. $\left(\frac{-2a^2}{3y^3}\right)^3$

74. $\left(\frac{3a}{-b^4}\right)^4$

75. $\left(\frac{2m^2}{n^3}\right)^{-2}$

76. $\left(\frac{6ab^3}{2ab}\right)^3$

77. $\left(\frac{4x^{-3}y^4}{8x^2y^{-2}}\right)^{-2}$

Write each of the following with positive exponents. Then simplify as much as possible.

25. 3^{-2}

26. $(-5)^{-2}$

27. $(-2)^{-5}$

28. 2^{-5}

29. $(-3)^{-2}$

30. $(-7)^{-2}$

31. $\left(\frac{3}{4}\right)^{-2}$

32. $\left(\frac{3}{5}\right)^{-2}$

33. $\left(\frac{1}{3}\right)^{-2} + \left(\frac{1}{2}\right)^{-3}$

34. $\left(\frac{1}{2}\right)^{-2} + \left(\frac{1}{3}\right)^{-3}$

35. $\left(\frac{2}{3}\right)^{-2} - \left(\frac{2}{5}\right)^{-2}$

36. $\left(\frac{3}{2}\right)^{-2} - \left(\frac{3}{4}\right)^{-2}$

No Calculator

Solutions - Page 1

43. $x^{-6}y^{-9}$ 44. $\frac{x^3}{8}$ 45. $\frac{a^4}{b^4}$ 46. $\frac{x^{10}}{y^{15}}$ 47. $\frac{3}{x}$ 48. 1
 49. $\frac{a^4}{b^6}$ 50. $15m^6$ 51. $-20a^4b^6$ 52. $30a^2b^5$ 53. $24m^4n^7$
 54. 42 55. $-6y^{-1}$ 56. $6a^{-4}b^{-2}$ 57. $5x^3$ 58. $5ab^2$ 59. $2m^4$
 60. $2a^3b^{-1}$ 61. $\frac{4a^2}{b^5}$ 62. $7x^8$ 63. $-3m^{-3}n^8$ 64. $9a^7b^{-4}$
 65. $4x^{-8}y^2$ 66. $4m^6$ 67. $-64x^6$ 68. $9m^6n^7$ 69. $\frac{c^6}{25d^6}$
 70. $\frac{a^9b^6}{8}$ 71. $\frac{y^8}{81x^{12}}$ 72. $\frac{16x^2}{9y^2}$ 73. $-\frac{8a^6}{27y^9}$
 74. $\frac{81a^4}{b^{16}}$ 75. $\frac{n^6}{4m^4}$ 76. $27b^6$ 77. $\frac{4x^{10}}{y^{12}}$ 78. 3 79. $\frac{3}{8}$

Solutions - Page 2

25. $\frac{1}{9}$ 26. $\frac{1}{25}$
 27. $-\frac{1}{32}$ 28. $\frac{1}{32}$
 29. $\frac{1}{9}$ 30. $\frac{1}{49}$
 31. $\frac{16}{9}$ 32. $\frac{25}{9}$
 33. 17 34. 31
 35. -4 36. $-\frac{4}{3}$