

Name:

Date:

Period:

Simplify.

1. $m^2 \cdot m^5$	2. $c^5 \cdot c^4 \cdot c^2$	3. $y^3 \cdot y^3$	4. $5z^3 \cdot z^5$
5. $6p^8 \cdot 4p^3$	6. $b^2 \cdot b$	7. $d^4 \cdot d^3 \cdot d$	8. $x^3 \cdot x \cdot x^5 \cdot x^4$
9. $(3xy^2)(8xy^4)$	10. $p^3 \cdot q^4 \cdot q^7$	11. $v^7 \cdot v^7$	12. $t \cdot t^8 \cdot t^{10}$
13. $-n^7 \cdot -6n^8$	14. $-10z^6 \cdot 3z^4$	15. $x^2 \cdot x^6$	16. $(-5u^2v^3)(4uv^2)$
17. $(-3j^3k)(-5j^2k^2)$	18. $54n \cdot -2n^3$	19. $a^3 \cdot c^4 \cdot c^3 \cdot a^7$	20. $w^8 \cdot w^7$
21. $a^9 \div a^4$	22. $x^{21} \div x^5$	23. $\frac{13^{21}}{13^7}$	24. $\frac{10^7}{10^3}$
25. $\frac{20x^4}{4x^2}$	26. $10a^{12} \div 5a^3$	27. $\frac{z^{14}}{z^8}$	28. $m^{20} \div m^{18}$

Evaluate.

29. $(-10)^2$	30. $(-2)^3$	31. $(-2)^5$	32. $(-3)^2$
33. $(-3)^3$	34. $(-1)^7$	35. $(-10)^5$	36. $(-4)^4$
37. $(-7)^0$	38. $(-8)^1$	39. $(-6)^2$	40. $(-3)^4$

Complete each equation for the missing value:

41. $(5^2)(5^5) = 5^?$

42. $(12^7)(12^3) = 12^?$

43. $(8^2)(8^7) = 8^?$

44. $(2^5)(2^2) = 2^?$

45. $(5^{-3})(5^5) = 5^?$

46. $(15^8)(15^{-5}) = 15^?$

47. $(6^7)(6^?) = 6^{15}$

48. $7^7 \div 7^3 = 7^?$

49. $\frac{11^{10}}{11^6} = 11^?$

50. $(10^7)(10^?) (10^{-6}) = 10^3$

51. $3^4 \div 3^2 = 3^?$

52. $\frac{5^9}{5^6} = 5^?$

53. $10^8 \div 10^? = 10^3$

54. $\frac{2^?}{2^3} = 2^4$

55. $\frac{13^6}{13^?} = 13^2$

56. $5^? \div 5^6 = 5^3$

Simplify.

57. $(a^2b^3)^4$

58. $(-4z^2)^3$

59. $(-3h^3)^5$

60. $(-4b^3)^3$

61. $(5a^3)^5$

62. $(3x^2y^4)^4$

63. $(-j^7)^2$

64. $(-3r)^3$

65. $(3y^2)^5$

66. $(-2r^5s^2)^6$

67. $(xy^2)^5$

68. $(-a^2b^3)^3$

69. $(-2r^2s)^4$

70. $(4uv^5)^3$

71. $(c^3)^2$

72. $(-d^5)^2$

Re-write using positive exponents.

73. 4^{-2}

74. $(-x)^{-2}$

75. $5x^{-4}$

76. $7ab^{-2}$

77. $3s^{-2}$

78. $11m^{-5}$

79. $2a^{-3}$

80. $n^{-5}v^2$