

Simplify:

1. $t^9 \cdot t^4$

2. $s^3 \cdot s$

3. $h^6 \cdot h^8$

4. $x^4 \cdot x^5$

5. $c^5 \cdot c^0$

6. $j^2 \cdot j^3$

7. $k \cdot k^7$

8. $v^8 \cdot v^2$

9. $d^7 \cdot d^9$

10. $q^9 \cdot q^6$

Simplify the product. Leave the product in exponent form.

11. $4^2 \cdot 4^4$

12. $5^4 \cdot 5^7$

13. $7^5 \cdot 7^7$

Simplify the product. Leave the product in exponent form.

14. $10^3 \cdot 10^6$

15. $6^5 \cdot 6^{10}$

16. $8^2 \cdot 8^4$

17. $3^3 \cdot 3^{10}$

18. $9^4 \cdot 9^9$

Simplify:

19. $g \cdot g^7$ [A] $2g^6$ [B] g^7 [C] $2g^8$ [D] g^8

20. $d^4 \cdot d$ [A] $2d^5$ [B] d^5 [C] d^4 [D] $2d^3$

21. $z^8 \cdot z^4$ [A] $2z^4$ [B] z^{12} [C] z^{32} [D] $2z^{12}$

22. $j^9 \cdot j^8$ [A] j^{72} [B] $2j$ [C] $2j^{17}$ [D] j^{17}

23. $u^3 \cdot u^9$ [A] $2u^6$ [B] u^{12} [C] $2u^{12}$ [D] u^{27}

24. $r^5 \cdot r^3$ [A] r^8 [B] $2r^8$ [C] r^{15} [D] $2r^2$

25. $x^7 \cdot x^6$ [A] $2x^{13}$ [B] x^{13} [C] x^{42} [D] $2x$

26. $c^6 \cdot c^5$ [A] c^{11} [B] $2c$ [C] $2c^{11}$ [D] c^{30}

27. $q \cdot q^0$ [A] q [B] q^0 [C] $2q$ [D] $2q^0$

Simplify:

28. $t^4 \cdot t^7$ [A] t^{11} [B] $2t^3$ [C] $2t^{11}$ [D] t^{28}

29. $5^2 \cdot 5^{12}$ [A] 5^{24} [B] 5^{14} [C] 25^{14} [D] 5^{10}

30. $6^4 \cdot 6^9$ [A] 6^{13} [B] 6^{36} [C] 36^{13} [D] 6^5

31. $7^5 \cdot 7^{10}$ [A] 7^{15} [B] 7^{50} [C] 49^{15} [D] 7^5

32. $4^3 \cdot 4^7$ [A] 4^{10} [B] 4^{21} [C] 16^{10} [D] 4^4

33. $3^2 \cdot 3^4$ [A] 3^6 [B] 9^6 [C] 3^8 [D] 3^2

Use the Quotient-of-Powers Property to simplify the quotient.

34. $-\frac{e^3 f^2 g^2}{efg}$ [A] $e^2 fg$ [B] $-e^4 f^3 g^3$ [C] $\frac{1}{e^2 fg}$ [D] $-e^2 fg$

35. $-\frac{a^4 b^4 c^3}{abc}$ [A] $\frac{1}{a^3 b^3 c^2}$ [B] $-a^5 b^5 c^4$ [C] $a^3 b^3 c^2$ [D] $-a^3 b^3 c^2$

36. $-\frac{p^2 q^5 r^5}{pqr}$ [A] $pq^4 r^4$ [B] $-pq^4 r^4$ [C] $-p^3 q^6 r^6$ [D] $\frac{1}{pq^4 r^4}$

37. $-\frac{f^5 g^3 h^4}{fgh}$ [A] $f^4 g^2 h^3$ [B] $-f^4 g^2 h^3$ [C] $-f^6 g^4 h^5$ [D] $\frac{1}{f^4 g^2 h^3}$

38. $-\frac{u^4 v^4 w^3}{uvw}$ [A] $-u^5 v^5 w^4$ [B] $\frac{1}{u^3 v^3 w^2}$ [C] $u^3 v^3 w^2$ [D] $-u^3 v^3 w^2$

39. $-\frac{b^3 c^3 d^5}{bcd}$ [A] $-b^2 c^2 d^4$ [B] $\frac{1}{b^2 c^2 d^4}$ [C] $b^2 c^2 d^4$ [D] $-b^4 c^4 d^6$

Use the Quotient-of-Powers Property to simplify the quotient.

40. $-\frac{r^2s^2t^4}{rst}$ [A] $\frac{1}{rst^3}$ [B] rst^3 [C] $-rst^3$ [D] $-r^3s^3t^5$

41. $-\frac{x^5y^5z^2}{xyz}$ [A] $-x^4y^4z$ [B] x^4y^4z [C] $-x^6y^6z^3$ [D] $\frac{1}{x^4y^4z}$

42. $-\frac{c^3d^5e^4}{cde}$ [A] $-c^2d^4e^3$ [B] $\frac{1}{c^2d^4e^3}$ [C] $-c^4d^6e^5$ [D] $c^2d^4e^3$

43. $-\frac{v^5w^2x^2}{vwx}$ [A] $-v^4wx$ [B] $-v^6w^3x^3$ [C] $\frac{1}{v^4wx}$ [D] v^4wx

44. $\frac{-9x^6y^6}{-3x^5y^5}$ [A] $-3xy$ [B] $2x^{11}y^{11}$ [C] $3xy$ [D] $-2x^{11}y^{11}$

45. $\frac{-40x^4y^4}{-8xy^3}$ [A] $3x^5y^7$ [B] $-5x^3y$ [C] $5x^3y$ [D] $-3x^5y^7$

46. $\frac{-36x^7y^4}{-9x^6y^2}$ [A] $4xy^2$ [B] $2x^{13}y^6$ [C] $-4xy^2$ [D] $-2x^{13}y^6$

47. $\frac{12x^5y^4}{-2x^3y}$ [A] $-3x^8y^5$ [B] $3x^8y^5$ [C] $6x^2y^3$ [D] $-6x^2y^3$

48. $\frac{-14x^6y^7}{-7x^2y^6}$ [A] x^8y^{13} [B] $2x^4y$ [C] $-x^8y^{13}$ [D] $-2x^4y$

49. $\frac{36x^6y^5}{-6x^4y^4}$ [A] $6x^2y$ [B] $-3x^{10}y^9$ [C] $-6x^2y$ [D] $3x^{10}y^9$

50. $\frac{-10x^6y^7}{-5x^3y^6}$ [A] $-x^9y^{13}$ [B] x^9y^{13} [C] $2x^3y$ [D] $-2x^3y$

Use the Quotient-of-Powers Property to simplify the quotient.

51. $\frac{-16x^7y^4}{-4x^6y}$ [A] $-2x^{13}y^5$ [B] $4xy^3$ [C] $-4xy^3$ [D] $2x^{13}y^5$

52. $\frac{-24x^6y^4}{-8x^5y^2}$ [A] $-2x^{11}y^6$ [B] $2x^{11}y^6$ [C] $3xy^2$ [D] $-3xy^2$

53. $\frac{-45x^6y^7}{-9x^2y^5}$ [A] $3x^8y^{12}$ [B] $-5x^4y^2$ [C] $-3x^8y^{12}$ [D] $5x^4y^2$

54. $\frac{2.5d^{14}e^{16}}{5deg^3}$

55. $\frac{3.2d^{15}e^{17}}{8deg^2}$

56. $\frac{0.4d^{14}e^{17}}{2deg^0}$

57. $\frac{3.6d^{16}e^{15}}{6deg^1}$

58. $\frac{2.1d^{14}e^{15}}{3deg^1}$

59. $\frac{2.1d^{16}e^{17}}{7deg^0}$

60. $\frac{7.2d^{14}e^{15}}{9deg^3}$

Use the Quotient-of-Powers Property to simplify the quotient.

61. $\frac{2.4d^{17}e^{16}}{4hdeg^2}$

62. $\frac{2.4d^{17}e^{16}}{6hdeg^1}$

63. $\frac{2.7d^{15}e^{14}}{9hdeg^2}$

64. Use the Quotient-of-Powers Property to simplify the quotient. Then find the value of the result.

$$\frac{5^5}{5^3}$$

65. Use the Quotient-of-Powers Property to simplify the quotient. Then find the value of the result.

$$\frac{6^{11}}{6^8}$$

66. Use the Quotient-of-Powers Property to simplify the quotient. Then find the value of the result.

$$\frac{4^{13}}{4^9}$$

67. Use the Quotient-of-Powers Property to simplify the quotient. Then find the value of the result.

$$\frac{6^{12}}{6^9}$$

68. Use the Quotient-of-Powers Property to simplify the quotient. Then find the value of the result.

$$\frac{4^{12}}{4^8}$$

Simplify the expression. Assume that the conditions of the Quotient-of-Powers Property are met.

69. $\left(\frac{4a^4b^5}{3a^3b^3}\right)^5$ [A] $\frac{1024a^5b^{10}}{243}$ [B] $\frac{4a^5b^{10}}{3}$ [C] $\frac{4a^6b^7}{3}$ [D] $\frac{1024a^6b^7}{243}$

70. $\left(\frac{5a^5b^3}{6a^4b^2}\right)^3$ [A] $\frac{125a^3b^3}{216}$ [B] $\frac{5a^4b^4}{6}$ [C] $\frac{125a^4b^4}{216}$ [D] $\frac{5a^3b^3}{6}$

71. $\left(\frac{4a^6b^4}{5a^5b^2}\right)^2$ [A] $\frac{4a^2b^4}{5}$ [B] $\frac{16a^2b^4}{25}$ [C] $\frac{4a^3b^4}{5}$ [D] $\frac{16a^3b^4}{25}$

72. $\left(\frac{3a^3b^6}{6a^2b^3}\right)^4$ [A] $\frac{a^4b^{12}}{16}$ [B] $\frac{a^5b^7}{16}$ [C] $\frac{3a^4b^{12}}{6}$ [D] $\frac{3a^5b^7}{6}$

73. $\left(\frac{3a^4b^7}{4a^3b^3}\right)^3$ [A] $\frac{3a^3b^{12}}{4}$ [B] $\frac{3a^4b^7}{4}$ [C] $\frac{27a^3b^{12}}{64}$ [D] $\frac{27a^4b^7}{64}$

74. $\left(\frac{5a^5b^5}{6a^2b^3}\right)^2$ [A] $\frac{5a^6b^4}{6}$ [B] $\frac{25a^6b^4}{36}$ [C] $\frac{25a^5b^4}{36}$ [D] $\frac{5a^5b^4}{6}$

75. $\left(\frac{6a^6b^3}{4a^2b^2}\right)^5$ [A] $\frac{243a^{20}b^5}{32}$ [B] $\frac{243a^9b^6}{32}$ [C] $\frac{6a^9b^6}{4}$ [D] $\frac{6a^{20}b^5}{4}$

76. $\left(\frac{5a^3b^4}{3a^2b^2}\right)^4$ [A] $\frac{5a^5b^6}{3}$ [B] $\frac{5a^4b^8}{3}$ [C] $\frac{625a^5b^6}{81}$ [D] $\frac{625a^4b^8}{81}$

Simplify the expression. Assume that the conditions of the Quotient-of-Powers Property are met.

$$77. \left(\frac{3a^4b^6}{5a^2b^2} \right)^5 \quad [A] \frac{243a^7b^9}{3125} \quad [B] \frac{3a^{10}b^{20}}{5} \quad [C] \frac{3a^7b^9}{5} \quad [D] \frac{243a^{10}b^{20}}{3125}$$

$$78. \left(\frac{6a^5b^7}{4a^4b^6} \right)^3 \quad [A] \frac{6a^4b^4}{4} \quad [B] \frac{6a^3b^3}{4} \quad [C] \frac{27a^4b^4}{8} \quad [D] \frac{27a^3b^3}{8}$$

$$79. \left(\frac{d^7}{e^6} \right)^9 \quad [A] \frac{d^{16}}{e^6} \quad [B] \frac{d^{63}}{e^6} \quad [C] \frac{d^{16}}{e^{15}} \quad [D] \frac{d^{63}}{e^{54}}$$

$$80. \left(\frac{w^5}{x^3} \right)^4 \quad [A] \frac{w^{20}}{x^{12}} \quad [B] \frac{w^9}{x^7} \quad [C] \frac{w^9}{x^3} \quad [D] \frac{w^{20}}{x^3}$$

$$81. \left(\frac{q^8}{r^2} \right)^8 \quad [A] \frac{q^{64}}{r^2} \quad [B] \frac{q^{64}}{r^{16}} \quad [C] \frac{q^{16}}{r^2} \quad [D] \frac{q^{16}}{r^{10}}$$

$$82. \left(\frac{r^9}{s^4} \right)^3 \quad [A] \frac{r^{27}}{s^{12}} \quad [B] \frac{r^{12}}{s^7} \quad [C] \frac{r^{12}}{s^4} \quad [D] \frac{r^{27}}{s^4}$$

$$83. \left(\frac{j^6}{k^4} \right)^7 \quad [A] \frac{j^{42}}{k^4} \quad [B] \frac{j^{13}}{k^4} \quad [C] \frac{j^{42}}{k^{28}} \quad [D] \frac{j^{13}}{k^{11}}$$

$$84. \left(\frac{a^3}{b^8} \right)^6 \quad [A] \frac{a^9}{b^8} \quad [B] \frac{a^{18}}{b^8} \quad [C] \frac{a^9}{b^{14}} \quad [D] \frac{a^{18}}{b^{48}}$$

$$85. \left(\frac{t^9}{u^7} \right)^5 \quad [A] \frac{t^{45}}{u^{35}} \quad [B] \frac{t^{14}}{u^{12}} \quad [C] \frac{t^{45}}{u^7} \quad [D] \frac{t^{14}}{u^7}$$

$$86. \left(\frac{x^2}{y^5} \right)^9 \quad [A] \frac{x^{11}}{y^5} \quad [B] \frac{x^{18}}{y^{45}} \quad [C] \frac{x^{11}}{y^{14}} \quad [D] \frac{x^{18}}{y^5}$$

Simplify the expression. Assume that the conditions of the Quotient-of-Powers Property are met.

$$87. \left(\frac{p^3}{q^8} \right)^5 \quad [A] \frac{p^8}{q^{13}} \quad [B] \frac{p^{15}}{q^{40}} \quad [C] \frac{p^{15}}{q^8} \quad [D] \frac{p^8}{q^8}$$

$$88. \left(\frac{u^9}{v^6} \right)^7 \quad [A] \frac{u^{63}}{v^6} \quad [B] \frac{u^{63}}{v^{42}} \quad [C] \frac{u^{16}}{v^{13}} \quad [D] \frac{u^{16}}{v^6}$$

$$89. \left(\frac{4}{5} \right)^2$$

$$90. \left(\frac{1}{4} \right)^3$$

$$91. \left(\frac{1}{5} \right)^3$$

$$92. \left(\frac{3}{4} \right)^3$$

$$93. \left(\frac{3}{5} \right)^2$$

$$94. \left(\frac{4a^4b}{c^3} \right)^f$$

$$95. \left(\frac{6a^5b^6}{c^2} \right)^q$$

Simplify the expression. Assume that the conditions of the Quotient-of-Powers Property are met.

$$96. \left(\frac{9a^5b}{c^2} \right)^n$$

$$97. \left(\frac{7a^6b^3}{c^4} \right)^p$$

$$98. \left(\frac{2ab^2}{c^6} \right)^k$$

$$99. \left(\frac{3a^3b^4}{c^5} \right)^g$$

$$100. \left(\frac{5a^2b^3}{c} \right)^c$$

$$101. \left(\frac{8a^6b^5}{c^4} \right)^d$$

$$102. \left(\frac{4a^3b}{c^2} \right)^h$$

$$103. \left(\frac{6a^5b^4}{c^6} \right)^j$$