

**Potenzen**

$$47. \frac{3a^2}{5y} : \frac{9a^3}{15y^2} = \frac{3a^2 \cdot 15y^2}{5y \cdot 9a^3} = \frac{y}{a}$$

$$48. \frac{a^2 - b^3}{7} : \frac{a}{a-b} = 14$$

$$49. \left(1 - \frac{x^2}{y^2}\right) : \left(\frac{x}{y} + 1\right)$$

$$50. \frac{xy}{x^2 + 2xy + y^2} : \frac{x^2 + 2xy}{x^2 - y^2}$$

$$51. \frac{6x^4b^3}{5a^2y^4} : \left(-\frac{5xb^3}{9a^2y}\right)$$

$$52. \frac{c^3a-b}{y^2a-3b} : \frac{c^2a-3b}{y^3a-2b}$$

$$53. \frac{48d^{2x-3y}}{98x^{3a-2b}} : \frac{18d^{x-3y}}{35x^{3a-2b}}$$

$$54. \left(\frac{3}{4}x^{2m-3} - 3x^{3m-2} + 1\frac{1}{2}x^{m+4}\right) : \frac{3}{4}x^{m-1}$$

$$55. (a^5 + b^6) : (a + b)$$

$$56. \frac{16x^4 - 9b^4 + 30b^2c - 25c^2}{4x^2 - 3b^2 + 5c}$$

$$\times 57. x^{m-3} \cdot x^{5-m} \cdot x^{2m-2}$$

$$58. 5x(2x^2 - 3xy - 4y^2)$$

$$59. (a + b)^2 \cdot (a + b)^3 \cdot (a + b)$$

$$60. 16\frac{1}{4}a^2b^2 \cdot (12a^2 - 28ab + 32b^2)$$

$$61. (10a^2 - 7ab + 8b^2) \cdot (3a^2 - 8b^2)$$

$$62. \frac{(x-y)^3}{(a+b)} \cdot \frac{(a^2 - b^2)^3}{(x^2 - y^2)}$$

$$63. \frac{(24ab^4)}{(25c)} : \frac{(16a^5)}{(5bc)}$$

$$64. (x^2y^2)^2 \cdot (x^3y^2)^2$$

$$65. (x^2y^3)^4 : (x^3y^2)^3$$

$$66. \left(\frac{7d^{n+1}b^n}{8c^{2n-2}}\right)^5 : \left(\frac{35d^4b^3y}{24c^4}\right)$$

$$67. (0,4a^2 - 0,5b^3)^2$$

$$68. \left(\frac{3x^2y^3}{4z^3} - \frac{8z^2}{9x^3y^2}\right)^2$$

$$69. \left(\frac{3}{4}x^2 - \frac{1}{2}xy - \frac{1}{3}y^2\right)^2$$

$$70. \frac{d^0 \cdot b^0}{c^0}$$

$$71. 19,5 \cdot \frac{d^0 \cdot x^0}{y^0}$$

$$72. \frac{b^0}{x^0 \cdot y^0}$$

$$73. \left(\frac{1}{4}\right)^{-2}$$

$$74. \frac{1}{3^{-2}}$$

$$75. \frac{2^4}{\left(\frac{1}{4}\right)^{-3}}$$

$$76. \left(\frac{3}{5}\right)^{-3} \cdot \left(\frac{4}{7}\right)^{-3} \cdot \left(\frac{1}{2}\right)^{-3}$$

$$77. (x^{-2})^3$$

$$78. (-x^2)^3$$

$$79. (-x^2)^{-3}$$

$$80. (-x^{-2})^{-3}$$

$$81. \frac{5}{3}x^{-4}y^2z : \frac{5}{6}x^{-6}y^{-5}z^3$$

$$82. -\left(-\frac{3xy^3}{4x}\right)^3$$

$$83. -\frac{10x^{-a}y^bz^2}{16d^{-3}} : 10x^by^{-a}z^d$$

$$84. \left(\frac{a^{-4}y^3}{x^2b^{-3}c^0}\right)^{-2} \cdot \left(\frac{a^{-3}y^2c^0}{x^{-1}b^{-4}}\right)^2$$

$$85. (2x^{-1} - 3y)^2$$

$$86. (2a^{-1} - 3b^{-1})^2$$

$$\times 87. \left(\frac{x^{2n-3}}{y^{n+2}} : \frac{a^{3n+1}}{b^{2n+4}}\right) : \left(\frac{x^{2n+1}}{y^{n+4}} : \frac{a^{3n-2}}{b^{2n+1}}\right)$$

$$88. (125d^3b^9)^n + 1 : (5a^n b^{3n-1})^3$$

**Lösungen**

$$47. \frac{y}{a}$$

$$48. \frac{2}{(a+b)}$$

$$49. \frac{y-x}{y}$$

$$50. \frac{(x-y) \cdot y}{(x+y) \cdot (x+2y)}$$

$$51. -\frac{54by^3}{25y^2}$$

$$52. c^{a+2b} \cdot y^{a+b}$$

$$53. \frac{20}{21}a^x$$

$$54. 5x^{m-2} - 4x^{2m-1} + 2x^5$$

$$55. a^4 - a^3b + a^2b^2 - ab^3 + b^4$$

$$56. 4x^2 + 3b^2 - 5c$$

$$57. x^{2m}$$

$$63. \frac{81b^9c}{32000a}$$

$$64. (xy)^{10}$$

$$65. (xy)^2$$

$$66. \frac{75 \cdot 24^n \cdot a^n + 5 \cdot b^{2n}}{85 \cdot 35^n \cdot c^{6n} - 10}$$

$$67. 0,16a^6 - 0,4a^3b^3 + 0,25b^6$$

$$68. \frac{9x^4y^6}{16z^6} - \frac{4y}{3xz} + \frac{64z^4}{81x^6y^4}$$

$$69. 16x^4 - \frac{3}{4}x^3y - \frac{1}{4}x^2y^2 + \frac{1}{3}xy^3 + \frac{1}{9}y^4$$

$$70. 1$$

$$71. 19,5$$

$$72. \frac{1}{x^a \cdot y^n}$$

$$73. 16$$

$$74. 9$$

$$75. \frac{1}{4}$$

$$76. \frac{7^3}{3^3 \cdot 2^3} = \left(\frac{7}{6}\right)^3 = \frac{127}{216}$$

$$77. \frac{1}{x^6}$$

$$78. -\frac{1}{x^6}$$

$$79. -\frac{1}{x^6} - \frac{4}{x^2} + \frac{12y}{x} + 9y^2$$

$$80. -a^6$$

$$81. \frac{2x^2y^8}{z^2}$$

$$82. \frac{27}{64}y^9$$

$$83. -\frac{y^6y^bz}{16d^ax^ax^b}$$

$$84. \frac{a^2b^2x^6}{y^2}$$

$$85. \frac{4}{x^2} - \frac{12y}{x} + 9y^2$$

$$86. \frac{4}{a^2} - \frac{12}{ab} + \frac{9}{b^2}$$

$$87. \frac{y^2}{a^3b^6x^4}$$

$$88. 125^n a^3 b^{12}$$