

Potenzen mit gleicher Basis dividieren:

... heißt: Exponenten subtrahieren: Bsp: $a^5 : a^3 = a^{5-3} = a^2$

a) $\frac{5^5}{5^3} =$

$\frac{0,5^5}{0,5^3} =$

b) $2^5 : 2^7 =$

$a^3 : a^6 =$

c) $-a^5 : -a^3 =$

$(-a)^6 : a^3 =$

d) $\frac{a^5}{a^3} =$

$\frac{(ab)^7}{(ab)^3} =$

e) $\frac{x^{3n}}{x^n} =$

$\frac{y^{3x+2}}{y^{3x-2}} =$

f) $\frac{(a+b)^7}{(a+b)^5} =$

$\frac{12a^5}{4a^3} =$

g) $\frac{3(x+y)^5}{x+y} =$

$\frac{3(a+b)^8}{12(a+b)^5} =$

h) $\frac{a^5}{a^3} =$

$\frac{b^5}{b^x} =$

i) $\frac{c^{3x}}{c^x} =$

$\frac{d^x}{d^{x-2}} =$

j) $\frac{e^5}{e^{5-x}} =$

Lösungen:

a) $\frac{5^5}{5^3} = 5^2$

$\frac{0,5^5}{0,5^3} = 0,25$

b) $2^5 : 2^7 = 2^{-2} = \frac{1}{4}$

$a^3 : a^6 = a^{-3}$

c) $-a^5 : -a^3 = -a^2 = a^2$

$(-a)^6 : a^3 = a^3$

d) $\frac{a^5}{a^3} = a^2$

$\frac{(ab)^7}{(ab)^3} = (ab)^4$

e) $\frac{x^{3n}}{x^n} = x^{2n}$

$\frac{y^{3x+2}}{y^{3x-2}} = y^4$

f) $\frac{(a+b)^7}{(a+b)^5} = (a+b)^2$

$\frac{12a^5}{4a^3} = 3a^2$

g) $\frac{3(x+y)^5}{x+y} = 3(x+y)^4$

$\frac{3(a+b)^8}{12(a+b)^5} = \frac{1}{4} (a+b)^3$

h) $\frac{a^5}{a^3} = a^2$

$\frac{b^5}{b^x} = b^{5-x}$

i) $\frac{c^{3x}}{c^x} = c^{2x}$

$\frac{d^x}{d^{x-2}} = d^2$

j) $\frac{e^5}{e^{5-x}} = e^x$