

	$x^{-r} = \frac{1}{x^r}$	$\sqrt[n]{x^a} = x^{\frac{a}{n}}$	$x^a \cdot x^b = x^{a+b}$	$\frac{e}{\frac{f}{g}} = e \cdot \frac{g}{f}$	$(x^a)^c = x^{a \cdot c}$
1.	$\frac{1}{x^2} = x^{-2}$	$\sqrt{x} = x^{\frac{1}{2}}$	$x^7 \cdot x^3 = x^{7+3} = x^{10}$	$\frac{1}{\frac{3}{3}} = 1 \cdot \frac{3}{x} = \frac{3}{x} = 3 \cdot \frac{1}{x}$	$(x^3)^2 = x^{3 \cdot 2} = x^6$
2.	$\frac{1}{x^5} = x^{-5}$	$\sqrt[3]{x} = x^{\frac{1}{3}}$	$x \cdot \sqrt{x} = x^1 \cdot x^{\frac{1}{2}} = x^{\frac{3}{2}}$	$\frac{1}{\frac{2}{\frac{2}{2}}} = \frac{x^2}{2} = \frac{1}{2} \cdot x^2$	$(x^4)^5 = x^{4 \cdot 5} = x^{20}$
3.	$\frac{3}{x^2} = 3 \cdot \frac{1}{x^2} = 3x^{-2}$	$\sqrt[5]{x^4} = x^{\frac{4}{5}}$	$\sqrt[4]{x^3} \cdot x^{-2} = x^{\frac{3}{4}-2} = x^{-\frac{5}{4}}$	$\frac{8}{\frac{5}{3}} = 8 \cdot \frac{3}{5} = \frac{24}{5}$	$\sqrt[7]{x^{\frac{5}{2}}} = (x^{\frac{5}{2}})^{\frac{1}{7}} = x^{\frac{5}{14}}$
4.	$\frac{1}{3x^2} = \frac{1}{3} \cdot \frac{1}{x^2} = \frac{1}{3} \cdot x^{-2}$	$\sqrt{4x} = \sqrt{4} \cdot \sqrt{x} = 2 \cdot x^{\frac{1}{2}}$	$x^a : x^b = \frac{x^a}{x^b} = x^{a-b}$	$\frac{x}{\frac{5}{4}} = x \cdot \frac{4}{5} = \frac{4}{5}x$	$(4x^5)^2 = 4^2 (x^5)^2 = 16x^{10}$
5.	$\frac{11}{13x^5} = \frac{11}{13} \cdot \frac{1}{x^5} = \frac{11}{13}x^{-5}$	$\sqrt[4]{16x^8} = \sqrt[4]{16} \sqrt[4]{x^8} = 2 \cdot x^2$	$\frac{x^5}{x^3} = x^{5-3} = x^2$	$\frac{3x}{\frac{3}{7}} = 3x \cdot \frac{7}{3} = 7x$	$(\sqrt{3} \cdot x^{\frac{3}{2}})^2 = 3 \cdot x^3$
6.	$\frac{2}{x^{-3}} = 2 \cdot \frac{1}{x^{-3}} = 2x^3$	rückwärts angewendet $x^{\frac{2}{3}} = \sqrt[3]{x^2}$	$\frac{x^{12}}{x^4} = x^8$	$\frac{7}{\frac{3}{\frac{9}{9}}} = \frac{7}{3} \cdot \frac{9}{2} = \frac{21}{2}$	$\left(\frac{x^2}{\frac{3}{x^{-4}}}\right)^{\sqrt{3}} = \left(\frac{x^{-2}}{9}\right)^{\sqrt{3}}$
7.	$\frac{1}{\sqrt[3]{x}} = \frac{1}{(x)^{\frac{1}{3}}} = x^{-\frac{1}{3}}$	rückwärts angewendet $4x^{-\frac{5}{2}} = 4 \cdot \frac{1}{x^{\frac{5}{2}}} = \frac{4}{\sqrt{x^5}}$	$\frac{2x^3}{x^6} = 2 \cdot \frac{x^3}{x^6} = 2 \cdot x^{-3}$	$\frac{13x}{\frac{2}{\frac{3}{3}}} = \frac{13x}{5} \cdot \frac{3}{2} = \frac{39x}{10}$	$= \frac{(x^{-2})^{\sqrt{3}}}{9^{\sqrt{3}}} = \frac{x^{-2\sqrt{3}}}{9^{\sqrt{3}}}$

	$\ln(\mathbf{a}) + \ln(\mathbf{b}) = \ln(\mathbf{a} \cdot \mathbf{b})$	$\ln(\mathbf{a}) - \ln(\mathbf{b}) = \ln\left(\frac{\mathbf{a}}{\mathbf{b}}\right)$	$\mathbf{c} \cdot \ln(\mathbf{a}) = \ln(\mathbf{a}^{\mathbf{c}})$	$\sqrt{\mathbf{a}} \cdot \sqrt{\mathbf{b}} = \sqrt{\mathbf{a} \cdot \mathbf{b}}$	Wissen
1.	$\ln(y) + \ln(y^2) = \ln(y^3)$	$\ln(y) - \ln(y^2) = \ln(y^{-1})$	$3 \ln(y) = \ln(y^3)$	$\sqrt{x} \cdot \sqrt{x^3} = \sqrt{x^4} = x^2$	$x^0 = 1$
2.	$\ln(y) + \ln(3) = \ln(3y)$	$\ln(z) - \ln\left(\frac{1}{5}\right) = \ln(5z)$	$-\ln(a) = \ln(a^{-1})$	$\sqrt{4x^3} = \sqrt{4} \cdot \sqrt{x^3} = 2x^{\frac{3}{2}}$	$\ln(1) = 0$
3.	$\ln\left(\frac{x}{3}\right) + \ln(12xy) = \ln(4x^2y)$	$\ln(u) - \ln(3\sqrt{u}) = \ln\left(\frac{\sqrt{u}}{3}\right)$	$-\frac{1}{4} \ln(16x^2) = \ln\left(\frac{1}{2\sqrt{x}}\right)$	$\sqrt[3]{x} \cdot \sqrt{x^3} = \sqrt[6]{x^{11}}$	$e^0 = 1$
4.	$\mathbf{a}^2 + 2\mathbf{ab} + \mathbf{b}^2 = (\mathbf{a} + \mathbf{b})^2$	$\mathbf{a}^2 - 2\mathbf{ab} + \mathbf{b}^2 = (\mathbf{a} - \mathbf{b})^2$	$\mathbf{a}^2 - \mathbf{b}^2 = (\mathbf{a} + \mathbf{b})(\mathbf{a} - \mathbf{b})$	$\frac{\sqrt{\mathbf{a}}}{\sqrt{\mathbf{b}}} = \sqrt{\frac{\mathbf{a}}{\mathbf{b}}}$	Fehlerquellen
5.	$(x + 3)^2 = x^2 + 6x + 9$	$(2y - 1)^2 = 4y^2 - 4y + 1$	$(y^3 + 11)(y^3 - 11) = y^6 - 121$	$\frac{\sqrt{x^5}}{\sqrt{x^9}} = \sqrt{x^{-4}} = \frac{1}{x^2}$	$\sqrt{a+b}$ $= \sqrt{a+b}$
6.	$y^2 + 2y + 1 = (y + 1)^2$	$x^2 - 10x + 25 = (x - 5)^2$	$b^2 - 1 = (b + 1)(b - 1)$	$\frac{\sqrt{4x^2}}{\sqrt{3x}} = \sqrt{\frac{4x}{3}}$	$\frac{\ln(x^2)}{\ln(x)}$
7.	$y^4 + 4y^2 + 4 = (y^2 + 2)^2$	$a^2 - a + \frac{1}{4} = \left(a - \frac{1}{2}\right)^2$	$9x^4 - 25 = (3x^2 + 5)(3x^2 - 5)$	$\frac{\sqrt{x^4 - 16}}{\sqrt{x + 2}} = \sqrt{(x^2 + 4)(x - 2)}$	$= \frac{\ln(x^2)}{\ln(x)}$