

# Integration der Partialbrüche

$$\int \frac{dx}{x-a} = \ln|x-a|$$

$$\int \frac{dx}{(x-a)^m} = -\frac{1}{m-1} \frac{1}{(x-a)^{m-1}}, \quad m > 1$$

$$\int \frac{dx}{x^2+ax+b} = \frac{2}{\sqrt{4b-a^2}} \arctan \frac{2x+a}{\sqrt{4b-a^2}}, \quad (4b-a^2 > 0)$$

$$\int \frac{x}{x^2+ax+b} dx = \frac{1}{2} \ln(x^2+ax+b) - \frac{a}{2} \int \frac{dx}{x^2+ax+b}, \quad (4b-a^2 > 0)$$

$$\int \frac{1}{(x^2+ax+b)^m} dx = \frac{2x+a}{(m-1)(4b-a^2)(x^2+ax+b)^{m-1}} + \frac{2(2m-3)}{(m-1)(4b-a^2)} \int \frac{dx}{(x^2+ax+b)^{m-1}}, \quad (4b-a^2 > 0, m \geq 2)$$

$$\int \frac{(2x+a)dx}{(x^2+ax+b)^m} = \frac{1}{(1-m)(x^2+ax+b)^{m-1}}, \quad (4b-a^2 > 0, m \geq 2)$$