

## 9 NEURČITÝ INTEGRÁL

Príklad. Vypočítajte integrál

$$\int \frac{x^2 + 1}{x^2 + 2x + 6} dx.$$

Riešenie.

$$\int \frac{x^2 + 1}{x^2 + 2x + 6} dx = *$$

Delíme

$$(x^2 + 1) : (x^2 + 2x + 6) = 1 - \frac{2x + 5}{x^2 + 2x + 6}$$

$$\begin{aligned} * &= \int 1 - \frac{2x + 5}{x^2 + 2x + 6} dx = x - \int \frac{2x + 2}{x^2 + 2x + 6} dx - \int \frac{3}{x^2 + 2x + 6} dx = \\ &= x - \ln(x^2 + 2x + 6) - 3 \int \frac{1}{(x + 1)^2 + 5} dx = \\ &= x - \ln(x^2 + 2x + 6) - \frac{3}{\sqrt{5}} \operatorname{arctg} \frac{x + 1}{\sqrt{5}} + c. \end{aligned}$$