

44) PRIMITIVNI FUNKCE, NEURČITÝ INTEGRÁL

Vypočítej:

$$1) \int \left(\frac{1-x}{x}\right)^2 dx \quad \left| x - 2\ln|x| - \frac{1}{x} + C \right.$$

$$2) \int \frac{(x+1)^2}{\sqrt{x}} dx \quad \left| \frac{2x^2}{5}\sqrt{x} + \frac{4}{3}x\sqrt{x} + 2\sqrt{x} + C \right.$$

$$3) \int 5^{2x} dx \quad \left| \frac{25^x}{\ln 25} + C \right.$$

$$4) \int (\sin x + \cos x)^2 dx \quad \left| x - \frac{\cos 2x}{2} + C \right.$$

$$5) \int \frac{e^x - e^{-x}}{2} dx \quad \left| \frac{e^x + e^{-x}}{2} + C \right.$$

$$6) \int \frac{3 - 2\cot^2 x}{\cos^2 x} dx \quad \left| 3\lg x + 2\cot x + C \right.$$

$$7) \int \frac{\tan^2 x}{\cos^2 x} dx \quad \left| \lg x - x + C \right.$$

$$8) \int \left(\sin \frac{x}{2} - \cos \frac{x}{2}\right)^2 dx \quad \left| x + \cos x + C \right.$$

$$9) \int \frac{\cos 2x}{\cos^2 x \sin^2 x} dx \quad \left| -\cot x - \tan x + C \right.$$

$$10) \int \frac{2x}{x^2-1} dx \quad \left| \ln|x^2-1| + C \right.$$

$$11) \int \frac{x-1}{\sqrt{x}} dx \quad \left| \sqrt{x} \left(\frac{2}{3}x-2\right) + C \right.$$

$$12) \int \left(e^{\frac{1}{2}x} + e^{-\frac{1}{2}x}\right)^2 dx \quad \left| e^x + 2x - e^{-x} + C \right.$$

$$13) \int (1+x^2)\sqrt{x} dx \quad \left| \frac{2}{3}x\sqrt{x} + \frac{2}{7}x^{\frac{3}{2}}\sqrt{x} + C \right.$$