Cvičenie 18.3.2003

Určitý integrál, substitučná metóda a metóda per partes pre určitý integrál

Určitý integrál:

1. $\int_0^3 |1-3x|\,\mathrm{d}x$ **2.** $\int_{-4}^{-2} \frac{1}{x}\mathrm{d}x$ **3.** $\int_0^{\pi} \cos x\,dx$ **4.** $\int_0^{\pi} |\cos x|\,\mathrm{d}x$ **5.** $\int_0^{\pi} \sin^3 x\,\mathrm{d}x$

6. $\int_0^{\frac{\pi}{2}} \cos x \cdot \sin^2 x\,\mathrm{d}x$ **7.** $\int_0^1 \frac{\sqrt{x}}{1+\sqrt{x}}\,\mathrm{d}x$ **8.** $\int_{-1}^1 \frac{\mathrm{d}x}{(1+x^2)^2}$ **9.** $\int_0^{\sqrt{2}} \sqrt{4-x^2}\,\mathrm{d}x$ **10.** $\int_0^{\ln 5} \frac{e^x\sqrt{e^x-1}}{e^x+3}\,\mathrm{d}x$

11. $\int_1^2 \frac{\mathrm{d}x}{\sqrt{3+2x-x^2}}$ **12.** $\int_0^{\frac{\pi}{2}} \frac{\sin\varphi}{6-5\cos\varphi+\cos^2\varphi}\mathrm{d}\varphi$ **13.** $\int_0^1 xe^{-x}\mathrm{d}x$ **14.** $\int_1^e \ln x\,dx$ **15.** $\int_0^{\frac{\pi}{2}} x\sin x\,\mathrm{d}x$

16. $\int_1^2 x\ln x\,dx$ **17.** $\int_0^1 x^3e^{2x}\mathrm{d}x$ **18.** $\int_0^{\frac{\pi}{2}} e^{2x}\sin x\,\mathrm{d}x$ **19.** $\int_{\frac{\pi}{4}}^{\frac{\pi}{3}} x\sin^{-2}x\,dx$ **20.** $\int_{-1}^1 \arccos x\,\mathrm{d}x$

21. $\int_0^{\sqrt{3}} x\mathrm{arctg}\,x\,\mathrm{d}x$ **22.** $\int_0^{\ln 2} x\cosh x\,\mathrm{d}x$ **23.** $I_n = \int_0^{\frac{\pi}{2}} \sin^n x\,\mathrm{d}x$

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