

## I. Užitím vzorců a úpravou integrandu :

$$1. \int_1^2 (2x^3 - 3x^2 + 2x) dx = \frac{7}{2}$$

$$2. \int_0^1 (x^2 + 2\sqrt[3]{x} + 2e^x) dx = 2e - \frac{1}{6}$$

$$3. \int_1^4 \frac{x+1}{\sqrt{x}} dx = \frac{20}{3}$$

$$4. \int_{\frac{\pi}{2}}^{\pi} \frac{\cos x}{\sin x + 1} dx = -\ln 2$$

$$5. \int_{-1}^1 \frac{x^2}{x^3 + 5} dx = \frac{1}{3} \ln \frac{3}{2}$$

$$6. \int_1^2 \frac{1}{\sqrt{2x + x^2}} dx = \ln(3 + \sqrt{8}) - \ln(2 + \sqrt{3})$$

$$7. \int_{-1}^0 \frac{1}{\sqrt{1 - 2x - x^2}} dx = \frac{\pi}{4}$$

## II. Metodou per partes :

$$1. \int_{-1}^{e-2} \ln(x+2) dx = 1$$

$$3. \int_{-1}^0 (2x+1)^2 \cdot e^x dx = 5 - 13e^{-1}$$

$$2. \int_0^{\frac{\pi}{4}} x \sin 2x dx = \frac{1}{4}$$

$$4. \int_0^1 \arccos x dx = 1$$

$$5. \int_0^{\sqrt{3}} x \cdot \arctg x dx = \frac{4\pi - 3\sqrt{3}}{6}$$

### III. Metodu substituce :

$$1. \int_1^{\sqrt{e}} \frac{1}{x\sqrt{1-\ln^2 x}} dx = \frac{\pi}{6}$$

$$2. \int_{-1}^0 x \cdot e^{1-x^2} dx = \frac{1}{2}(1-e)$$

$$3. \int_3^8 \frac{\sqrt{x+1}+1}{\sqrt{x+1}-1} dx = 9 + 4\ln 2$$

$$4. \int_0^7 \frac{x-1}{\sqrt[3]{x+1}} dx = \frac{48}{5}$$

$$5. \int_3^4 \frac{\sqrt{x-3}}{x-2} dx = 2 - \frac{\pi}{2}$$

$$6. \int_2^4 \frac{1}{x\sqrt{x-1}} dx = \frac{\pi}{6}$$

$$7. \int_0^{\frac{\pi}{4}} \operatorname{tg}^3 x dx = \ln \frac{\sqrt{2}}{2} + \frac{1}{2}$$

$$8. \int_{\frac{\pi}{4}}^{\frac{\pi}{2}} \frac{\cos x}{\sin^3 x} dx = \frac{1}{2}$$

$$9. \int_{-\frac{\pi}{2}}^{\frac{\pi}{4}} \frac{\cos x + \cos^3 x}{\sin x} dx = 2\ln \frac{\sqrt{2}}{2} + \frac{1}{4}$$