

1. téma – návody

Vypočítajte neurčitý integrál (priamo alebo rozkladom) :

$$1.1. \quad \int (2x + \frac{1}{x^2}) dx = \int 2x dx + \int \frac{1}{x^2} dx = 2 \int x dx + \int x^{-2} dx = \dots (\text{použite vzorce})$$

$$1.2. \quad \int \frac{4}{x} dx = \int \frac{4}{x} dx = 4 \int \frac{1}{x} dx = \dots (\text{vzorec})$$

$$1.3. \quad \int (4 \cos x - 5 \sin x) dx = 4 \int \cos x dx - 5 \int \sin x dx = \dots (\text{vzorce})$$

$$1.4. \quad \int (5 - \frac{4}{\sqrt{x}}) dx = \int 5 dx - 4 \int \frac{1}{\sqrt{x}} dx = 5 \int 1 dx - 4 \int \frac{1}{x^{\frac{1}{2}}} dx = 5x - 4 \int x^{-\frac{1}{2}} dx = \dots (\text{vzorec})$$

$$1.5. \quad \int (e^x - x - x^2) dx = \int e^x dx - \int x dx - \int x^2 dx = \dots (\text{vzorce})$$

$$1.6. \quad \int e^x \cdot \left(\frac{1}{e^x} - 3 \right) dx = \int (1 - 3e^x) dx = \int 1 dx - \int 3e^x dx = x - 3 \int e^x dx = \dots (\text{vzorec})$$

návod: roznásobte zátvorku

$$1.7. \quad \int \frac{\sin^2 x}{\cos^2 x} dx = \quad / \text{návod: } \sin^2 x + \cos^2 x = 1 /$$

$$= \int \frac{1 - \cos^2 x}{\cos^2 x} dx = \int \left(\frac{1}{\cos^2 x} - \frac{\cos^2 x}{\cos^2 x} \right) dx = \int \frac{1}{\cos^2 x} dx - \int 1 dx = \dots (\text{vzorce})$$

$$1.8. \quad \int \left(\frac{4}{\sin^2 x} - \frac{5}{1+x^2} \right) dx = \int \frac{4}{\sin^2 x} dx - \int \frac{5}{1+x^2} dx = 4 \int \frac{1}{\sin^2 x} dx - 5 \int \frac{1}{1+x^2} dx = \dots$$

(vzorce)