

Calcolo di integrali

(1) Calcolare i seguenti integrali:

$$\int_0^{\pi/4} \sin(x) dx, \quad \int_0^1 e^{2x} dx, \quad \int_3^5 \sin(3x) dx, \quad \int_0^{\pi/4} \cos(x) dx$$
$$\int_2^5 \frac{1}{x+1} dx, \quad \int_2^5 \frac{1}{x^2} dx, \quad \int_1^{\pi/4} (1 + \tan(x)) dx, \quad \int_1^{\pi/4} \frac{1}{1+x^2} dx$$

(2) Calcolare i seguenti integrali:

$$\int_2^5 x e^x dx \quad \int_0^1 (x+3) e^{2x} dx \quad \int_3^5 (2x-1) \sin(3x) dx$$
$$\int_2^5 x \log(x^2+2) dx \quad \int_2^5 \frac{1}{x^2} \log(x+2) dx \quad \int_1^4 (2x-3) \arctan(x) dx$$

(3) Calcolare i seguenti integrali

$$\int_0^1 \frac{2x}{(x+1)(x+3)} dx \quad \int_5^6 \frac{x^2-1}{(x-1)(3x+2)} dx \quad \int_3^4 \frac{x-7}{(x-5)(x+3)} dx$$
$$\int_0^3 \frac{5x+4}{(x^2+1)(x+3)} dx \quad \int_5^6 \frac{2x^2+3}{(x-1)(x^2+3)} dx \quad \int_3^4 \frac{x^3+3}{(x-7)(x^2+2)} dx$$
$$\int_0^3 \frac{3x-1}{(x+5)(x+2)^2} dx \quad \int_5^6 \frac{1}{(x-2)(x+1)^2} dx \quad \int_3^4 \frac{x^2+3x}{(x-7)(x+2)^2} dx$$

(4) Calcolare i seguenti integrali:

$$\int_1^2 \sin(\sqrt{x}) \frac{dx}{\sqrt{x}} \quad \int_0^1 \frac{2x dx}{(2x^2+5)(x^2+3)} \quad \int_0^1 \frac{\sin(x) dx}{(\cos(x)+3)(\cos(x)-2)}$$
$$\int_0^\pi \frac{\sin(x) dx}{(\cos^2(x)+1)(\cos(x)-5)} \quad \int_0^\pi \frac{\cos(x) dx}{(\sin(x)+2)(\sin(x)+3)}$$
$$\int_1^3 \frac{\log(x)}{(\log(x)+7)(\log(x)+1)} \frac{dx}{x} \quad \int_0^2 \frac{dx}{(e^x+1)e^x}$$