

Si calcolino i seguenti integrali indefiniti:

(1) $\int x^2 e^{x^3+1} dx;$

(2) $\int \frac{1}{x} \log^2 x dx;$

(3) $\int \cos^2 x \sin x dx;$

(4) $\int \frac{x^2}{1+x^3} dx;$

(5) $\int \frac{e^x}{e^{2x}+1} dx;$

(6) $\int (x^2+1)e^x dx;$

(7) $\int \cos^2 x dx;$

(8) $\int e^x \cos x dx;$

(9) $\int x^2 \sin x dx;$

(10) $\int x^3 \log x dx;$

(11) $\int \frac{x-1}{x^2-4} dx;$

(12) $\int \frac{2x}{x^2-3x+2} dx;$

(13) $\int \frac{x+1}{(x-3)^2} dx;$

(14) $\int \frac{2x+1}{x^2+4} dx;$

(15) $\int \frac{x+3}{x^2+9} dx.$

Si calcolino i seguenti integrali definiti:

$$\int_1^2 \frac{\log x + 1}{x(\log x - 1)} dx; \quad \int_0^1 \frac{e^x}{e^{2x} - 4} dx;$$

$$\int_0^{\pi/2} x^3 \cos x dx; \quad \int_0^3 e^x \sin(3x) dx;$$

$$\int_1^2 \frac{x-2}{x^2-9} dx; \quad \int_0^2 \frac{x-1}{x^2+3} dx;$$
$$\int_2^3 \frac{x}{(x+2)^2} dx; \quad \int_{1/e}^e \log x dx.$$

Si calcolino i seguenti integrali impropri:

$$\int_0^2 \log x dx; \quad \int_1^{+\infty} e^{-3x} dx;$$
$$\int_1^{+\infty} \frac{1}{x^2-4} dx; \quad \int_0^1 \frac{x+1}{x} dx.$$