

Calcolare

$$(i) \int_0^1 \frac{x}{x^2+x+1} dx ; (ii) \int_0^1 \frac{x^3+x}{x^2+x+1} dx ; (iii) \int_0^1 \frac{x+1}{(x^2+1)(x+1)} dx$$

$$(iv) \int_0^{\frac{\pi}{2}} \frac{\cos x}{\sin^2 x - \sin x + 1} dx ; (v) \int_0^2 \frac{x\sqrt{x^2+3}}{x^2+2} dx$$

Scrivere una primitiva per ciascuna delle seguenti funzioni

$$(i) f(x) = \sqrt{x+4}, f:]-4, +\infty[\rightarrow \mathbb{R}$$

$$(ii) f(x) = \sqrt[3]{x+3}, f:]-3, +\infty[\rightarrow \mathbb{R}$$

$$(iii) f(x) = \frac{1}{\sqrt{2x+3}}, f:]-\frac{3}{2}, +\infty[\rightarrow \mathbb{R}$$

$$(iv) f(x) = \frac{1}{2+4x^2}, f: \mathbb{R} \rightarrow \mathbb{R}$$

$$(v) f(x) = \frac{1}{\sqrt{4-4x^2}} ; f:]-1, 1[\rightarrow \mathbb{R}$$

$$(vi) f(x) = \sin x \cos x ; f: \mathbb{R} \rightarrow \mathbb{R}.$$