

## FORMULARIO INTEGRALI INDEFINITI

$$\int dx = x + c$$

$$\int x^\alpha dx = \frac{x^{\alpha+1}}{\alpha+1} + c \quad (\alpha \neq -1)$$

$$\int \frac{dx}{x} = \ln|x| + c$$

$$\int \sqrt{x} dx = \frac{x^{\frac{3}{2}}}{\frac{3}{2}} + c = \frac{2}{3} \sqrt{x^3} + c$$

$$\int \frac{dx}{\sqrt{x}} = 2\sqrt{x} + c$$

$$\int e^x dx = e^x + c$$

$$\int a^x dx = \frac{a^x}{\ln(a)} + c$$

Funzioni goniometriche:

$$\int \sin x dx = -\cos x + c$$

$$\int \cos x dx = \sin x + c$$

$$\int \frac{dx}{\cos^2 x} = \operatorname{tg} x + c$$

$$\int \frac{dx}{\sin^2 x} = -\operatorname{cotg} x + c$$

$$\int (\tan^2 x + 1) dx = \operatorname{tg} x + c$$

$$\int \frac{dx}{\sqrt{1-x^2}} = \operatorname{arcsen} x + c$$

$$\int \frac{dx}{-\sqrt{1-x^2}} = \operatorname{arccos} x + c$$

$$\int \frac{dx}{1+x^2} = \operatorname{arctg} x + c$$

$$\int -\frac{dx}{1+x^2} = \operatorname{arcotg} x + c$$

Funzioni iperboliche:

$$\int \sinh x dx = \cosh x + c$$

$$\int \cosh x dx = \sinh x + c$$

$$\int \frac{dx}{\cosh^2 x} = \operatorname{tgh} x + c$$

$$\int \frac{dx}{\sinh^2 x} = -\operatorname{cotgh} x + c$$

$$\int \frac{dx}{\sqrt{x^2-1}} = \operatorname{settcosh} x + c = \ln(x + \sqrt{x^2-1}) + c$$

$$\int \frac{dx}{\sqrt{x^2+1}} = \operatorname{settsenh} x + c = \ln(x + \sqrt{x^2+1}) + c$$

$$\int \frac{dx}{1-x^2} = \operatorname{setttgh} x + c = \frac{1}{2} \ln \left| \frac{1+x}{1-x} \right| + c$$

$$\int \frac{dx}{x^2-1} = \operatorname{settcotgh} x + c = \frac{1}{2} \ln \left| \frac{x-1}{x+1} \right| + c$$

Alcuni integrali la cui primitiva non è esprimibile in termini di funzioni fin qui studiate:

$$\int \frac{\sin x}{x} dx; \int \frac{\cos x}{x} dx$$

$$\int e^{\pm x^2} dx; \int e^{\frac{\pm 1}{x^2}} dx;$$

$$\int \frac{dx}{\ln x}$$