

INTEGRALI INDEFINITI

Regole di integrazione

1. $\int (f(x) + g(x)) dx = \int f(x) dx + \int g(x) dx$
2. $\int k f(x) dx = k \int f(x) dx$

INTEGRALI INDEFINITI FONDAMENTALI	INTEGRALI INDEFINITI GENERALIZZATI
$\int a dx = ax + k$	
$\int x^\alpha dx = \frac{x^{\alpha+1}}{\alpha+1} + k \quad \text{con } \alpha \neq -1$	$\int f^\alpha(x) f'(x) dx = \frac{f^{\alpha+1}(x)}{\alpha+1} + k \quad \text{con } \alpha \neq -1$
$\text{se } \alpha = -1 \rightarrow \int x^\alpha dx = \int \frac{1}{x} dx = \ln x + k$	$\int \frac{f'(x)}{f(x)} dx = \ln f(x) + k$
$\int \text{sen } x dx = -\cos x + k$	$\int \text{sen}(f(x)) f'(x) dx = -\cos(f(x)) + k$
$\int \cos x dx = \text{sen } x + k$	$\int \cos(f(x)) f'(x) dx = \text{sen}(f(x)) + k$
$\int 1 + \text{tg}^2 x dx = \int \frac{1}{\cos^2 x} = \text{tg } x + k$	$\int (1 + \text{tg}^2(f(x))) f'(x) dx = \text{tg}(f(x)) + k$
$\int 1 + \text{cotg}^2 x dx = \int \frac{1}{\text{sen}^2 x} = -\text{cotg } x + k$	$\int (1 + \text{cotg}^2(f(x))) f'(x) dx = -\text{cotg}(f(x)) + k$
$\int e^x dx = e^x + k$	$\int e^{f(x)} f'(x) dx = e^{f(x)} + k$
$\int a^x dx = \frac{a^x}{\ln a} + k$	$\int a^{f(x)} f'(x) dx = \frac{a^{f(x)}}{\ln a} + k$
$\int \frac{1}{\sqrt{1-x^2}} dx = \text{arc sen } x + k$	$\int \frac{f'(x)}{\sqrt{1-f^2(x)}} dx = \text{arc sen}(f(x)) + k$
$\int \frac{1}{1+x^2} dx = \text{arc tg } x + k$	$\int \frac{f'(x)}{1+f^2(x)} dx = \text{arc tg}(f(x)) + k$