

Integration Rules

- $\int dx = x + C$
- $\int x^r dx = \frac{x^{r+1}}{r+1} + C$ (for $r \neq -1$)
- $\int \frac{1}{x} dx = \ln|x| + C$
- $\int \cos x dx = \sin x + C$
- $\int \sin x dx = -\cos x + C$
- $\int \sec^2 x dx = \tan x + C$
- $\int \csc^2 x dx = -\cot x + C$
- $\int \sec x \tan x dx = \sec x + C$
- $\int \csc x \cot x dx = -\csc x + C$
- $\int e^x dx = e^x + C$
- $\int b^x dx = \frac{b^x}{\ln b} + C$ (for $b > 0, b \neq 1$)
- $\int \frac{1}{1+x^2} dx = \tan^{-1} x + C$
- $\int \frac{1}{\sqrt{1-x^2}} dx = \sin^{-1} x + C$
- $\int \frac{1}{x\sqrt{x^2-1}} dx = \sec^{-1} |x| + C$