

Fórmulas Básicas de Integración

MATE 3053

$$\int \sec^2 x \, dx = \tan x + c \quad \int \frac{1}{x} \, dx = \ln |x| + c$$

$$\int e^x \, dx = e^x + c \quad \int \csc^2 x \, dx = -\cot x + c$$

$$\int \sin x \, dx = -\cos x + c \quad \int \sec x \tan x \, dx = \sec x + c$$

$$\int \cos x \, dx = \sin x + c \quad \int \csc x \cot x \, dx = -\csc x + c$$

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

Fórmulas

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

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

$$\int \frac{-1}{\sqrt{1-x^2}} dx = -\sin^{-1} x + c \text{ o } \cos^{-1} x + c$$

$$\int \frac{1}{a^2 + u^2} du = \frac{1}{a} \tan^{-1} \left(\frac{u}{a} \right) + c$$

Fórmulas para recordar

$$\int \tan u \, du = -\ln |\cos u| + c$$

$$\int \cot u \, du = \ln |\sin u| + c$$

$$\int \sec u \, du = \ln |\sec u + \tan u| + c$$

$$\int \csc u \, du = -\ln |\csc u + \cot u| + c$$

Resumen de los integrales más comunes usando IP

1. Para integrales de la forma

$$\int x^n e^{ax} dx \quad \int x^n \sin ax dx \quad \int x^n \cos ax dx \quad u = x^n$$

2. Para integrales de la forma

$$\begin{array}{ccc} \int x^n \ln x dx & \int x^n \sin^{-1} ax dx & \int x^n \tan^{-1} ax dx \\ u = \ln x & u = \sin^{-1} x & u = \tan^{-1} x \end{array}$$

3. Para integrales de la forma

$$\begin{array}{cc} \int e^{ax} \sin bx dx & \int e^{ax} \cos bx dx \\ u = \sin bx & u = \cos bx \end{array}$$