

1. a) $\int k f(x) dx = k \int f(x) dx$ b) $\int (f(x) \pm g(x)) dx = \int f(x) dx \pm \int g(x) dx$

2. $\int k dx = kx + C$, k es una constante

3. a) $\int x^n dx = \frac{1}{n+1} x^{n+1} + C$, $n \neq -1$ b) $\int \frac{1}{x} dx = \ln |x| + C$

4. a) $\int a^x dx = \frac{a^x}{\ln a} + C$, $a > 0$, $a \neq 1$ b) $\int e^x dx = e^x + C$

5. Integrales de las funciones trigonométricas básicas.

a) $\int \sin x dx = -\cos x + C$

b) $\int \cos x dx = \text{sen} x + C$

c) $\int \tan x dx = -\ln |\cos x| + C$

d) $\int \csc x dx = \ln |\csc x - \cot x| + C$

e) $\int \sec x dx = \ln |\sec x + \tan x| + C$

f) $\int \cot x dx = \ln |\sin x| + C$

6. Integrales de otras funciones trigonométricas.

a) $\int \sec^2 x dx = \tan x + C$

b) $\int \csc^2 x dx = -\cot x + C$

c) $\int \sec x \tan x dx = \sec x + C$

d) $\int \csc x \cot x dx = -\csc x + C$

7. Integrales de $\frac{1}{a^2 \pm x^2}$.

a) $\int \frac{1}{a^2 + x^2} dx = \frac{1}{a} \arctan \frac{x}{a} + C$, $a > 0$

b) $\int \frac{1}{a^2 - x^2} dx = \frac{1}{2a} \ln \left| \frac{x+a}{x-a} \right| + C$, $a > 0$

8. Algunas integrales que contienen $\sqrt{a^2 \pm x^2}$.

a) $\int \frac{dx}{\sqrt{a^2 + x^2}} = \ln |x + \sqrt{a^2 + x^2}| + C$

c) $\int \frac{dx}{\sqrt{x^2 - a^2}} = \ln(x + \sqrt{x^2 - a^2}) + C$

b) $\int \frac{dx}{\sqrt{a^2 - x^2}} = \arcsin \frac{x}{a} + C$, $a > 0$

d) $\int \frac{dx}{x\sqrt{x^2 - a^2}} = \frac{1}{a} \text{arcsec} \frac{x}{a} + C$

e) $\int \frac{dx}{x\sqrt{a^2 - x^2}} = -\frac{1}{a} \ln \left(\frac{a + \sqrt{a^2 - x^2}}{x} \right) + C$

f) $\int \sqrt{a^2 - x^2} dx = \frac{x}{2} \sqrt{a^2 - x^2} + \frac{a^2}{2} \arcsin \frac{x}{a} + C$

g) $\int \sqrt{x^2 + a^2} dx = \frac{x}{2} \sqrt{x^2 + a^2} + \frac{a^2}{2} \ln(x + \sqrt{x^2 + a^2}) + C$

h) $\int \sqrt{x^2 - a^2} dx = \frac{x}{2} \sqrt{x^2 - a^2} - \frac{a^2}{2} \ln(x + \sqrt{x^2 - a^2}) + C$