

Tabela Básica de Integrais Indefinidas

Considere: **u, v** como funções;
a, n como constantes.

Propriedade (linearidade) : $\int (a.u + v) dx = a \int u dx + \int v dx$

Fórmulas generalizadas:

1) $\int du = u + C$	12) $\int \sec^2 u du = \operatorname{tg} u + C$
2) $\int u^n du = \frac{u^{n+1}}{n+1} + C \quad (n \neq -1)$	13) $\int \operatorname{cosec}^2 u du = -\operatorname{cotg} u + C$
3) $\int \frac{1}{u} du = \ln u + C$	14) $\int \sinh u du = \cosh u + C$
4) $\int e^u du = e^u + C$	15) $\int \cosh u du = \sinh u + C$
5) $\int a^u du = \frac{a^u}{\ln a} + C$	16) $\int \frac{du}{u^2 + a^2} = \frac{1}{a} \operatorname{arctg} \frac{u}{a} + C$
6) $\int \operatorname{sen} u du = -\cos u + C$	17) $\int \frac{du}{u^2 - a^2} = \frac{1}{2a} \ln \left(\frac{u-a}{u+a} \right) + C$
7) $\int \cos u du = \operatorname{sen} u + C$	18) $\int \frac{du}{a^2 - u^2} = \frac{1}{2a} \ln \left(\frac{a+u}{a-u} \right) + C$
8) $\int \operatorname{tg} u du = \ln \sec u + C$	19) $\int \frac{du}{\sqrt{u^2 + a^2}} = \ln \left(u + \sqrt{u^2 + a^2} \right) + C = \operatorname{arcsenh} \frac{u}{a} + C$
9) $\int \operatorname{cotg} u du = \ln \operatorname{sen} u + C$	20) $\int \frac{du}{\sqrt{u^2 - a^2}} = \ln \left(u + \sqrt{u^2 - a^2} \right) + C$
10) $\int \sec u du = \ln \sec u + \operatorname{tg} u + C$	21) $\int \frac{du}{\sqrt{a^2 - u^2}} = \operatorname{arcsen} \left(\frac{u}{a} \right) + C$
11) $\int \operatorname{cosec} u du = \ln \operatorname{cosec} u - \operatorname{cotg} u + C$	22) $\int \sqrt{u^2 + a^2} du = \frac{u}{2} \sqrt{u^2 + a^2} + \frac{a^2}{2} \ln (u + \sqrt{u^2 + a^2}) + C$

Fórmulas de Recorrência:

$$\int \operatorname{sen}^n u du = -\frac{1}{n} \operatorname{sen}^{n-1} u \cdot \cos u + \frac{n-1}{n} \int \operatorname{sen}^{n-2} u du$$

$$\int \cos^n u du = \frac{1}{n} \cos^{n-1} u \cdot \operatorname{sen} u + \frac{n-1}{n} \int \cos^{n-2} u du$$

Integral por partes: $\int u dv = uv - \int v du$