# TABELA DE INTEGRAIS

1. $\int u^n du = \frac{1}{n+1}u^{n+1} + C, n \neq -1$
2. $\int \frac{1}{u} du = \ln|u| + C$
3. $\int e^u du = e^u + C$
4. $\int a^u du = \frac{1}{\ln a}a^u + C$
5. $\int \operatorname{sen} u\, du = -\cos u + C$
6. $\int \cos u\, du = \operatorname{sen} u + C$
7. $\int \sec^2 u\, du = \operatorname{tg} u + C$
8. $\int \operatorname{cossec}^2 u\, du = -\operatorname{cotg} u + C$
9. $\int \sec u \operatorname{tg} u\, du = \sec u + C$
10. $\int \operatorname{cossec} u \operatorname{cotg} u\, du = -\operatorname{cossec} u + C$
11. $\int \operatorname{tg} u\, du = -\ln|\cos u| + C$
12. $\int \operatorname{cotg} u\, du = \ln|\operatorname{sen} u| + C$
13. $\int \sec u\, du = \ln|\sec u + \operatorname{tg} u| + C$
14. $\int \operatorname{cossec} u\, du = \ln|\operatorname{cossec} u - \operatorname{cotg} u| + C$
15. $\int u \operatorname{sen} u\, du = \operatorname{sen} u - u\cos u + C$
16. $\int u\cos u\, du = \cos u + u \operatorname{sen} u + C$
17. $\int \operatorname{sen}^2 u\, du = \frac{1}{2}u - \frac{1}{4}\operatorname{sen} 2u + C$
18. $\int \cos^2 u\, du = \frac{1}{2}u + \frac{1}{4}\operatorname{sen} 2u + C$
19. $\int \operatorname{tg}^2 u du = \operatorname{tg} u - u + C$
20. $\int \operatorname{cotg}^2 u\, du = -\operatorname{cotg} u - u + C$
21. $\int \operatorname{sen}^3 u\, du = -\frac{1}{3}(2 + \operatorname{sen}^2 u)\cos u + C$
22. $\int \cos^3 du = \frac{1}{3}(2 + \cos^2 u)\operatorname{sen} u + C$
23. $\int \operatorname{tg}^3 u\, du = \frac{1}{2}\operatorname{tg}^2 u + \ln|\cos u| + C$
24. $\int \operatorname{cotg}^3 u\, du = \frac{1}{2}\operatorname{cotg}^2 u - \ln|\operatorname{sen} u| + C$
25. $\int \sec^3 u\, du = \frac{1}{2}\sec u \operatorname{tg} u + \frac{1}{2}\ln|\sec u + \operatorname{tg} u| + C$
26. $\int \operatorname{cossec}^3 u\, du = -\frac{1}{2}\operatorname{cossec} u \operatorname{cotg} u + \frac{1}{2}\ln|\operatorname{cossec} u - \operatorname{cotg} u| + C$
27. $\int \operatorname{sen} au \cos bu\, du = -\frac{\operatorname{sen}(a-b)u}{2(a-b)} - \frac{\operatorname{sen}(a+b)u}{2(a+b)} + C$
28. $\int \cos au \cos bu\, du = \frac{\operatorname{sen}(a-b)u}{2(a-b)} + \frac{\operatorname{sen}(a+b)u}{2(a+b)} + C$
29. $\int e^{au} \operatorname{sen} bu\, du = \frac{e^{au}}{a^2+b^2}(a \operatorname{sen} bu - b\cos bu) + C$
30. $\int e^{au} \cos bu\, du = \frac{e^{au}}{a^2+b^2}(a\cos bu + b \operatorname{sen} bu) + C$
31. $\int \operatorname{senh} u\, du = \cosh u + C$
32. $\int \cosh u\, du = \operatorname{senh} u + C$
33. $\int \operatorname{sech}^2 u\, du = \operatorname{tgh} u + C$
34. $\int \operatorname{cossech}^2 u\, du = -\operatorname{cotgh} u + C$
35. $\int \operatorname{tgh} u\, du = \ln\cosh u + C$
36. $\int \operatorname{cotgh} u\, du = \ln|\operatorname{senh} u| + C$
37. $\int \ln u\, du = u\ln u - u + C$
38. $\int u \ln u\, du = \frac{1}{2}u^2 \ln u - \frac{1}{4}\ln u^2 + C$
39. $\int \frac{1}{\sqrt{a^2+u^2}} du = \operatorname{sen}^{-1}\frac{u}{a} + C$
40. $\int \frac{du}{\sqrt{u^2+a^2}} = \ln|u + \sqrt{u^2+a^2}| + C$
41. $\int \sqrt{a^2-u^2}\, du = \frac{u}{2}\sqrt{a^2-u^2} + \frac{a^2}{2}\operatorname{sen}^{-1}\frac{u}{a} + C$
42. $\int \sqrt{a^2+u^2} du = \frac{u}{2}\sqrt{a^2+u^2} + \frac{a^2}{2}\ln|u + \sqrt{a^2+u^2}| + C$
43. $\int \frac{du}{a^2+u^2} = \frac{1}{a}\operatorname{tg}^{-1}\frac{u}{a} + C$
44. $\int \frac{du}{a^2-u^2} = \frac{1}{2a}\ln\left|\frac{u+a}{u-a}\right| + C$