

Tabela de Integrais do Prof. Douglas MaioliSeja $a \in \mathbb{R}$ uma constante.

1. $\int 0 \, dx = c$

2. $\int dx = x + c$

3. $\int a \, dx = ax + c$

4. $\int x^a \, dx = \frac{x^{a+1}}{a+1} + c, \quad a \neq -1$

5. $\int \frac{dx}{x} = \ln|x| + c$

6. $\int a^x \, du = \frac{a^x}{\ln(a)} + c$

7. $\int e^x \, du = e^x + c$

8. $\int \sin(x) \, dx = -\cos(x) + c$

9. $\int \cos(x) \, dx = \sin(x) + c$

10. $\int \operatorname{tg}(x) \, dx = \ln|\sec(x)| + c$

11. $\int \operatorname{cotg}(x) \, dx = \ln|\sin(x)| + c$

12. $\int \sec(x) \, dx = \ln|\sec(x) + \operatorname{tg}(x)| + c$

13. $\int \operatorname{cosec}(x) \, dx = \ln|\operatorname{cosec}(x) - \operatorname{cotg}(x)| + c$

14. $\int \sec(x) \cdot \operatorname{tg}(x) \, dx = \sec(x) + c$

15. $\int \operatorname{cosec}(x) \cdot \operatorname{cotg}(x) \, dx = -\operatorname{cosec}(x) + c$

16. $\int \sec^2(x) \, dx = \operatorname{tg}(x) + c$

17. $\int \operatorname{cosec}^2(x) \, dx = -\operatorname{cotg}(x) + c$

18. $\int \frac{dx}{x^2+a^2} = \frac{1}{a} \operatorname{arc} \operatorname{tg} \frac{x}{a} + c$

19. $\int \frac{dx}{x^2-a^2} = \frac{1}{2a} \ln \left| \frac{x-a}{x+a} \right| + c$

20. $\int \frac{dx}{a^2-x^2} = \frac{1}{2a} \ln \left| \frac{x+a}{x-a} \right| + c$

21. $\int \frac{dx}{\sqrt{x^2+a^2}} = \ln|x + \sqrt{x^2+a^2}| + c$

22. $\int \frac{dx}{x\sqrt{x^2-a^2}} = \frac{1}{a} \operatorname{arc} \sec \left| \frac{x}{a} \right| + c$

23. $\int \frac{dx}{\sqrt{x^2-a^2}} = \ln|x + \sqrt{x^2-a^2}| + c$

24. $\int \frac{dx}{\sqrt{a^2-x^2}} = \operatorname{arc} \sin \frac{x}{a} + c, \quad x^2 < a^2$

25. $\int \cos(ax) \, dx = \frac{\sin(ax)}{a} + c$

26. $\int \sin(ax) \, dx = \frac{-\cos(ax)}{a} + c$

27. $\int e^{ax} \, dx = \frac{e^{ax}}{a} + c$

Método de Integração por partes:

$$\int u \, dv = u \cdot v - \int v \, du$$

Teorema Fundamental do Cálculo

$$\int_a^b f(x) \, dx = F(b) - F(a), \text{ onde } F'(x) = f(x)$$