



Primitivas Imediatas

Na lista de primitivas que se segue, $f: I \rightarrow \mathbb{R}$ é uma função derivável no intervalo I e \mathcal{C} denota uma constante real arbitrária.

$$1. \int a \, dx = ax + \mathcal{C}$$

$$2. \int f'(x) f^\alpha(x) \, dx = \frac{f^{\alpha+1}(x)}{\alpha+1} + \mathcal{C} \quad (\alpha \neq -1)$$

$$3. \int \frac{f'(x)}{f(x)} \, dx = \ln |f(x)| + \mathcal{C}$$

$$4. \int a^{f(x)} f'(x) \, dx = \frac{a^{f(x)}}{\ln a} + \mathcal{C} \quad (a \in \mathbb{R}^+ \setminus \{1\})$$

$$5. \int f'(x) \cos f(x) \, dx = \sin(f(x)) + \mathcal{C}$$

$$6. \int f'(x) \sin f(x) \, dx = -\cos f(x) + \mathcal{C}$$

$$7. \int \frac{f'(x)}{\cos^2(f(x))} \, dx = \operatorname{tg}(f(x)) + \mathcal{C}$$

$$8. \int \frac{f'(x)}{\sin^2(f(x))} \, dx = -\operatorname{cotg}(f(x)) + \mathcal{C}$$

$$9. \int f'(x) \operatorname{tg} f(x) \, dx = -\ln |\cos(f(x))| + \mathcal{C}$$

$$10. \int f'(x) \operatorname{cotg} f(x) \, dx = \ln |\sin(f(x))| + \mathcal{C}$$

$$11. \int \frac{f'(x)}{\cos(f(x))} \, dx = \ln \left| \frac{1}{\cos(f(x))} + \operatorname{tg} f \right| + \mathcal{C}$$

$$12. \int \frac{f'(x)}{\sin(f(x))} \, dx = \ln \left| \frac{1}{\sin(f(x))} - \operatorname{cotg}(f(x)) \right| + \mathcal{C}$$

$$13. \int \frac{f'(x)}{\sqrt{1-f^2(x)}} \, dx = \arcsin(f(x)) + \mathcal{C}$$

$$14. \int \frac{-f'(x)}{\sqrt{1-f^2(x)}} \, dx = \arccos(f(x)) + \mathcal{C}$$

$$15. \int \frac{f'(x)}{1+f^2(x)} \, dx = \operatorname{arctg}(f(x)) + \mathcal{C}$$

$$16. \int \frac{-f'(x)}{1+f^2(x)} \, dx = \operatorname{arccotg}(f(x)) + \mathcal{C}$$

$$17. \int f'(x) \operatorname{ch}(f(x)) \, dx = \operatorname{sh}(f(x)) + \mathcal{C}$$

$$18. \int f'(x) \operatorname{sh}(f(x)) \, dx = \operatorname{ch}(f(x)) + \mathcal{C}$$

$$19. \int \frac{f'(x)}{\operatorname{ch}^2(f(x))} \, dx = \operatorname{th}(f(x)) + \mathcal{C}$$

$$20. \int \frac{f'(x)}{\operatorname{sh}^2(f(x))} \, dx = -\operatorname{coth}(f(x)) + \mathcal{C}$$

$$21. \int \frac{f'(x)}{\sqrt{f^2(x)+1}} \, dx = \operatorname{argsh}(f(x)) + \mathcal{C}$$

$$22. \int \frac{f'(x)}{\sqrt{f^2(x)-1}} \, dx = \operatorname{argch}(f(x)) + \mathcal{C}$$

$$23. \int \frac{f'(x)}{1-f^2(x)} \, dx = \operatorname{argth}(f(x)) + \mathcal{C}$$

$$24. \int \frac{f'(x)}{1-f^2(x)} \, dx = \operatorname{argcoth}(f(x)) + \mathcal{C}$$