165 Intégrales indéfinies immédiates :

- $\int 1\, dx = x + c$
- $\int x^n\ dx = \frac{x^{n+1}}{n+1} + c \quad ; \quad n \neq -1$
- $\int \sqrt[n]{x}\ dx = \frac{n}{n+1} \sqrt[n]{x^{n+1}} + c$
- $\int x^{-1}\ dx = ln|x| + c$
- $\int a^x\ dx = \frac{a^x}{ln(a)} + c \ ; \ \left| \begin{array}{l} a > 0 \\ a \neq 1 \end{array} \right.$
- $\int e^x\ dx = e^x + c$
- $\int sin(x)\ dx = -cos(x) + c$
- $\int cos(x)\ dx = sin(x) + c$
- $\int \frac{1}{cos^2(x)}\ dx = tan(x) + c$
- $\int \frac{1}{sin^2(x)}\ dx = \frac{-1}{tan(x)} + c$
- $\int \frac{1}{\sqrt{1-x^2}}\ dx = arcsin(x) + c$
- $\int \frac{1}{1+x^2}\ dx = arctan(x) + c$
- $\int \frac{1}{\sqrt{1+x^2}}\ dx = ln\left|x + \sqrt{x^2+1}\right| + c$
- $\int \frac{1}{\sqrt{x^2-1}}\ dx = ln\left|x + \sqrt{x^2-1}\right| + c \quad ; \quad |x| > 1$
- $\int \frac{1}{1-x^2}\ dx = \frac{1}{2} ln\left|\frac{1+x}{1-x}\right| + c \quad ; \quad |x| < 1$
- $\int \frac{1}{x^2-1}\ dx = \frac{1}{2} ln\left|\frac{x-1}{x+1}\right| + c \quad ; \quad |x| > 1$
- $\int (ax+b)^n\ dx = \frac{(ax+b)^{n+1}}{a(n+1)} + c \quad ; \quad \left| \begin{array}{l} n \neq -1 \\ a \neq 0 \end{array} \right.$
- $\int (ax+b)^{-1}\ dx = \frac{ln|ax+b|}{a} + c \quad ; \quad a \neq 0$
- $\int x(ax+b)^n\ dx = \frac{(ax+b)^{n+2}}{a^2(n+2)} - \frac{b(ax+b)^{n+1}}{a^2(n+1)} + c \ ; \left| \begin{array}{l} a \neq 0 \\ n \neq -1 \\ n \neq -2 \end{array} \right.$
- $\int x(ax+b)^{-1}\ dx = \frac{x}{a} - \frac{b\ ln|ax+b|}{a^2} + c$
- $\int x(ax+b)^{-2}\ dx = \frac{b}{a^2(ax+b)} + \frac{ln|ax+b|}{a^2} + c$

- $\int \frac{1}{x(ax+b)}\,dx = -\frac{1}{b}\,ln\left|\frac{ax+b}{x}\right| + c$
- $\int \frac{1}{x^2+a^2}\,dx = \frac{1}{a}\,arctan\left(\frac{x}{a}\right) + c$
- $\int \frac{x}{x^2+a^2}\,dx = \frac{1}{2}\,ln(x^2+a^2) + c$
- $\int \frac{x^2}{x^2+a^2}\,dx = x - a\cdot arctan\left(\frac{x}{a}\right) + c$
- $\int \frac{1}{x(x^2+a^2)}\,dx = \frac{1}{2a^2}\,ln\left(\frac{x^2}{x^2+a^2}\right) + c \;\; ; \;\; |x| > a$
- $\int \frac{1}{x^2-a^2}\,dx = \frac{1}{2a}\,ln\left(\frac{x-a}{x+a}\right) + c$
- $\int \frac{x}{x^2-a^2}\,dx = \frac{1}{2}\,ln|x^2-a^2| + c$
- $\int \frac{x}{(x^2-a^2)^n}\,dx = \frac{-1}{2(n-1)(x^2-a^2)^{n-1}} + c \;\; ; \;\; \left|\begin{array}{l} n \neq 1 \\ |x| < a \end{array}\right.$
- $\int \frac{1}{a^2-x^2}\,dx = \frac{1}{2a}ln\left|\frac{a+x}{a-x}\right| + c$
- $\int \frac{x}{a^2-x^2}\,dx = \frac{-1}{2}ln|a^2-x^2| + c$
- $\int \frac{x}{(a^2-x^2)^n}\,dx = \frac{1}{2(n-1)(a^2-x^2)^{n-1}} + c \;\; ; \;\; n \neq 1$
- $\int \frac{1}{ax^2+bx+c}\,dx = \begin{cases} \frac{2}{\sqrt{-\Delta}}\,arctan\left(\frac{2ax+b}{\sqrt{-\Delta}}\right) + c \;\; ; \;\; \Delta < 0 \\ \frac{1}{\sqrt{\Delta}}\,ln\left|\frac{2ax+b-\sqrt{\Delta}}{2ax+b+\sqrt{\Delta}}\right| + c \;\; ; \;\; \Delta > 0 \end{cases}$
- $\int \frac{x}{ax^2+bx+c}\,dx = \frac{1}{2a}ln|ax^2+bx+c| - \frac{b}{2a}\int \frac{1}{ax^2+bx+c}dx \; + c$
- $\int \frac{1}{\sqrt{ax+b}}dx = \frac{2\sqrt{ax+b}}{a} + c$
- $\int \frac{x}{\sqrt{ax+b}}dx = \frac{2(ax-2b)\sqrt{ax+b}}{3a^2} \; + c$
- $\int \sqrt{ax+b}\,dx = \frac{2\sqrt{(ax+b)^3}}{3a} + c$
- $\int x\sqrt{ax+b}\,dx = \frac{2(3ax-2b)\sqrt{(ax+b)^3}}{15a^2} + c$
- $\int \frac{1}{\sqrt{x^2+a^2}}\,dx = ln\left|x + \sqrt{a^2+x^2}\right| + c$

- $\int \frac{x}{\sqrt{x^2+a^2}}\,dx = \sqrt{x^2+a^2} + c$
- $\int \frac{x}{x\sqrt{x^2+a^2}}\,dx = \frac{-1}{a}\,ln\left|\frac{a+\sqrt{x^2+a^2}}{x}\right| + c$
- $\int \frac{x}{x^2\sqrt{x^2+a^2}}\,dx = \frac{-\sqrt{a^2+x^2}}{a^2x} + 2$
- $\int \sqrt{x^2+a^2}\,dx = \frac{x\sqrt{a^2+x^2}}{2} + \frac{a^2}{2}\,ln\left|x+\sqrt{x^2+a^2}\right| + c$
- $\int x\sqrt{x^2+a^2}\,dx = \frac{1}{3}(x^2+a^2)\sqrt{x^2+a^2} + c$
- $\int \frac{1}{\sqrt{x^2-a^2}}\,dx = ln\left|x+\sqrt{x^2-a^2}\right| + c \quad ; \quad |x| > a$
- $\int \frac{x}{\sqrt{x^2-a^2}}\,dx = \sqrt{x^2-a^2} + c \quad ; \quad |x| > a$
- $\int \sqrt{x^2-a^2}\,dx = \frac{x\sqrt{x^2-a^2}}{2} - \frac{a^2}{2}ln\left|x+\sqrt{x^2-a^2}\right| + c \quad ; \quad |x| > a$
- $\int x\sqrt{x^2-a^2}\,dx = \frac{(x^2-a^2)\sqrt{x^2-a^2}}{3} + c \quad ; \quad |x| > a$
- $\int \frac{1}{\sqrt{a^2-x^2}}\,dx = arcsin\left(\frac{x}{a}\right) + c \quad ; \quad |x| < a$
- $\int \frac{x}{\sqrt{a^2-x^2}}\,dx = -\sqrt{a^2-x^2} + c \quad ; \quad |x| < a$
- $\int \sqrt{a^2-x^2}\,dx = \frac{x\sqrt{a^2-x^2}}{2} + \frac{a^2}{2}\,arcsin\left(\frac{x}{a}\right) + c \quad ; \quad |x| < a$
- $\int x\sqrt{a^2-x^2}\,dx = \frac{-(a^2-x^2)\sqrt{a^2-x^2}}{3} + c \quad ; \quad |x| < a$
- $\int \frac{\sqrt{a^2-x^2}}{x}\,dx = \sqrt{a^2-x^2} - a\,ln\left|\frac{a+\sqrt{a^2-x^2}}{x}\right| + c \quad ; \quad |x| < a$
- $\int sin(ax)\,dx = \frac{-cos(ax)}{a} + c$
- $\int x\,sin(ax)\,dx = \frac{sin(ax)}{a^2} - \frac{x\,cos(ax)}{a} + c$
- $\int \frac{1}{sin(ax)}dx = \frac{1}{a}\,ln\left|tan\left(\frac{ax}{2}\right)\right| + c$
- $\int \frac{1}{1+sin(ax)}dx = \frac{1}{a}\,tan\left(\frac{ax}{2}-\frac{\pi}{4}\right) + c$
- $\int \frac{1}{1-sin(ax)}dx = \frac{1}{a}\,tan\left(\frac{ax}{2}+\frac{\pi}{4}\right) + c$
- $\int \frac{x}{1+sin(ax)}dx = \frac{x}{a}\,tan\left(\frac{ax}{2}-\frac{\pi}{4}\right) + \frac{2}{a^2}\,ln\left|cos\left(\frac{ax}{2}-\frac{\pi}{4}\right)\right| + c$
- $\int \frac{x}{1-sin(ax)}dx = \frac{x}{a}\,cotg\left(\frac{\pi}{4}-\frac{ax}{2}\right) + \frac{2}{a^2}\,ln\left|sin\left(\frac{\pi}{4}-\frac{ax}{2}\right)\right| + c$

- $\int \frac{sin(ax)}{1+sin(ax)}dx = x+\frac{1}{a}\tan\left(\frac{\pi}{4}-\frac{ax}{2}\right)+c$
- $\int \frac{sin(ax)}{1-sin(ax)}dx = -x+\frac{1}{a}\tan\left(\frac{\pi}{4}+\frac{ax}{2}\right)+c$
- $\int cos(ax)\ dx = \frac{1}{a}\ sin(ax)+c$
- $\int x\,cos(ax)\ dx = \frac{cos(ax)}{a^2}+\frac{x\,sin(ax)}{a}+c$
- $\int \frac{1}{cos(ax)}\ dx = \frac{1}{a}\ ln\left|tan\left(\frac{ax}{2}+\frac{\pi}{4}\right)\right|+c$
- $\int \frac{1}{1+cos(ax)}\ dx = \frac{1}{a}\ tan\left(\frac{ax}{2}\right)+c$
- $\int \frac{1}{1-cos(ax)}\ dx = \frac{-1}{a}\ cotg\left(\frac{ax}{2}\right)+c$
- $\int \frac{x}{1+cos(ax)}\ dx = \frac{x}{a}\ tan\left(\frac{ax}{2}\right)+\frac{2}{a^2}\ ln\left|cos\left(\frac{ax}{2}\right)\right|+c$
- $\int \frac{x}{1-cos(ax)}\ dx = \frac{-x}{a}\ cotg\left(\frac{ax}{2}\right)+\frac{2}{a^2}\ ln\left|sin\left(\frac{ax}{2}\right)\right|+c$
- $\int \frac{cos(ax)}{1+cos(ax)}\ dx = x-\frac{1}{a}\ tan\left(\frac{ax}{2}\right)+c$
- $\int \frac{cos(ax)}{1-cos(ax)}\ dx = -x-\frac{1}{a}\ tan\left(\frac{ax}{2}\right)+c$
- $\int \frac{1}{sin(ax)+cos(ax)}\ dx = \frac{1}{a\sqrt{2}}\ ln\left|tan\left(\frac{ax}{2}+\frac{\pi}{8}\right)\right|+c$
- $\int \frac{1}{sin(ax)-cos(ax)}\ dx = \frac{1}{a\sqrt{2}}\ ln\left|tan\left(\frac{ax}{2}-\frac{\pi}{8}\right)\right|+c$
- $\int \frac{cos(ax)}{sin(ax)+cos(ax)}\ dx = \frac{x}{2}+\frac{ln|sin(ax)+cos(ax)|}{2a}+c$
- $\int \frac{cos(ax)}{sin(ax)-cos(ax)}\ dx = \frac{-x}{2}+\frac{ln|sin(ax)-cos(ax)|}{2a}+c$
- $\int \frac{sin(ax)}{sin(ax)+cos(ax)}\ dx = \frac{x}{2}-\frac{ln|sin(ax)+cos(ax)|}{2a}+c$
- $\int \frac{sin(ax)}{sin(ax)-cos(ax)}\ dx = \frac{x}{2}+\frac{ln|sin(ax)-cos(ax)|}{2a}+c$
- $\int tan(ax)\ dx = \frac{-1}{a}\ ln|cos(ax)|+c$
- $\int \frac{tan^n(ax)}{cos^2(ax)}\ dx = \frac{tan^{n+1}(ax)}{a(n+1)}\quad ;\quad n\neq -1$
- $\int \frac{1}{tan(ax)}\ dx = \frac{1}{a}\ ln|sin(ax)|+c$
- $\int \frac{cotg^n(ax)}{sin^2(ax)}\ dx = \frac{-cotg^{n+1}(ax)}{a(n+1)}+c\quad ;\quad n\neq -1$

- $\int e^{ax}\, dx = \frac{1}{a}\, e^{ax} + c$
- $\int x\, e^{ax}\, dx = \frac{e^{ax}}{a}\left(x - \frac{1}{a}\right) + c$
- $\int x^2\, e^{ax}\, dx = \frac{e^{ax}}{a}\left(x^2 - \frac{2x}{a} + \frac{2}{a^2}\right) + c$
- $\int e^{ax} \sin(bx)\, dx = \frac{e^{ax}\left(a \sin(bx) - b \cos(bx)\right)}{a^2 + b^2} + c$
- $\int e^{ax} \cos(bx)\, dx = \frac{e^{ax}\left(a \cos(bx) + b \sin(bx)\right)}{a^2 + b^2} + c$
- $\int e^{ax} \cos(bx)\, dx = \frac{e^{ax}\left(a \cos(bx) + b \sin(bx)\right)}{a^2 + b^2} + c$
- $\int \ln(x)\, dx = x \ln(x) - x + c \quad ; \quad x > 0$
- $\int x \ln(x)\, dx = \frac{x^2}{2}\left(\ln(x) - \frac{1}{2}\right) + c \quad ; \quad x > 0$
- $\int x^n \ln(x)\, dx = \frac{x^{n+1}}{n+1}\left(\ln(x) - \frac{1}{n+1}\right) + c \quad ; \quad \begin{vmatrix} x > 0 \\ n \neq -1 \end{vmatrix}$
- $\int \frac{\ln(x)}{x} dx = \frac{1}{2}\left(\ln(x)\right)^2 + c \quad ; \quad x > 0$
- $\int \frac{\ln(x)}{x^2} dx = \frac{-\ln(x)}{x} - \frac{1}{x} + c \quad ; \quad x > 0$
- $\int \frac{\left(\ln(x)\right)^n}{x} dx = \frac{\left(\ln(x)\right)^{n+1}}{n+1} + c \quad ; \quad \begin{vmatrix} x > 0 \\ n \neq -1 \end{vmatrix}$
- $\int \frac{1}{x \ln(x)} dx = \ln\left(\ln(x)\right) + c \quad ; \quad x > 1$
- $\int \ln(x^2 + a^2)\, dx = x \ln(x^2 + a^2) - 2x + 2a\, Arctan\left(\frac{x}{a}\right) + c$
- $\int \ln(x^2 - a^2)\, dx = x \ln(x^2 - a^2) - 2x + a \ln\left(\frac{x+a}{x-a}\right) + c \; ; \; |x| > a$
- $\int \sin\left(\ln(x)\right) dx = \frac{x\left(\sin\left(\ln(x)\right) - \cos\left(\ln(x)\right)\right)}{2} + c \quad ; \quad x > 0$
- $\int \cos\left(\ln(x)\right) dx = \frac{x\left(\sin\left(\ln(x)\right) + \cos\left(\ln(x)\right)\right)}{2} + c \quad ; \quad x > 0$
- $\int Arcsin\left(\frac{x}{a}\right) dx = x\, Arcsin\left(\frac{x}{a}\right) + \sqrt{a^2 - x^2} + c$
- $\int x\, Arcsin\left(\frac{x}{a}\right) dx = \left(\frac{x^2}{2} - \frac{a^2}{4}\right) Arcsin\left(\frac{x}{a}\right) + \frac{x\sqrt{a^2 - x^2}}{4} + c$
- $\int Arcsin\left(\frac{x}{a}\right) dx = x\, Arccos\left(\frac{x}{a}\right) - \sqrt{a^2 - x^2} + c$
- $\int x\, Arccos\left(\frac{x}{a}\right) dx = \left(\frac{x^2}{2} - \frac{a^2}{4}\right) Arccos\left(\frac{x}{a}\right) - \frac{x\sqrt{a^2 - x^2}}{4} + c$
- $\int Arctan\left(\frac{x}{a}\right) dx = x\, Arctan\left(\frac{x}{a}\right) - \frac{a}{2} \ln(a^2 + x^2) + c$
- $\int x\, Arctan\left(\frac{x}{a}\right) dx = \frac{1}{2}(a^2 + x^2) Arctan\left(\frac{x}{a}\right) - \frac{ax}{2} + c$