1	$\int dx = x$	$\int x dx = \frac{x^2}{2}$	13	$\int \frac{dx}{1+x^2} = arctgx$	$\int \frac{dx}{a^2+x^2} = \frac{1}{a} arctg \frac{x}{a}$
2	$\int \frac{dx}{x^2} = -\frac{1}{x}$	$\int \frac{dx}{\sqrt{x}} = 2\sqrt{x}$	14	$\int \frac{dx}{x^2-1} = \frac{1}{2}\ln\left\|\frac{x-1}{x+1}\right\|$	$\int \frac{dx}{x^2-a^2} = \frac{1}{2a}\ln\left\|\frac{x-a}{x+a}\right\|$
3	$\int x^\alpha dx = \frac{x^{\alpha+1}}{\alpha+1};\ \underline{\alpha \neq -1}$		15	$\int \frac{dx}{\sqrt{x^2 \pm k}} = \ln\left\|x + \sqrt{x^2 \pm k}\right\|$	
4	$\int \frac{dx}{x} = \ln\|x\|$	$\int \frac{dx}{\alpha x+\beta} = \frac{1}{\alpha}\ln\|\alpha x+\beta\|$	16	$\int \frac{dx}{\sqrt{1-x^2}} = \arcsin x = -\arccos x$	$\int \frac{dx}{\sqrt{a^2-x^2}} = \arcsin\frac{x}{a} = -\arccos\frac{x}{a}$
5	$\int e^x dx = e^x$	$\int e^{\alpha x} dx = \frac{1}{\alpha} e^{\alpha x}$	17	$\int \sqrt{x^2+k}\,dx = \frac{x\sqrt{x^2+k}}{2} + \frac{k}{2}\ln\left\|x+\sqrt{x^2+k}\right\|$	
6	$\int a^x dx = \frac{a^x}{\ln a}$	$\int a^{\lambda x} dx = \frac{1}{\lambda}\frac{a^{\lambda x}}{\ln a}$	18	$\int \sqrt{a^2-x^2}\,dx = \frac{x\sqrt{a^2-x^2}}{2} + \frac{a^2}{2}\arcsin\frac{x}{a}$	
7	$\int \sin x dx = -\cos x$	$\int \sin \alpha x dx = -\frac{1}{\alpha}\cos \alpha x$	19	$\int shx dx = chx$	
8	$\int \cos x dx = \sin x$	$\int \cos \alpha x dx = \frac{1}{\alpha}\sin \alpha x$	20	$\int chx dx = shx$	
9	$\int tgx dx = -\ln\|\cos x\|$	$\int tg\alpha x dx = -\frac{1}{\alpha}\ln\|\cos \alpha x\|$	21	$\int \frac{1}{sh^2 x} dx = -cthx$	
10	$\int ctgx dx = \ln\|\sin x\|$	$\int ctg\alpha x dx = \frac{1}{\alpha}\ln\|\sin \alpha x\|$	22	$\int \frac{1}{ch^2 x} dx = thx$	
11	$\int \frac{dx}{\cos^2 x} = tgx$	$\int \frac{dx}{\cos^2 \alpha x} = \frac{1}{\alpha} tg\alpha x$	23	$\int \frac{dx}{\cos x} = \frac{1}{2}\ln\left\|\frac{\sin x + 1}{\sin x - 1}\right\|$	
12	$\int \frac{dx}{\sin^2 x} = -ctgx$	$\int \frac{dx}{\sin^2 \alpha x} = -\frac{1}{\alpha} ctg\alpha x$	24	$\int \frac{dx}{\sin x} = \frac{1}{2}\ln\left\|\frac{\cos x - 1}{\cos x + 1}\right\|$	
	$\sin(2x)dx = d(\sin^2 x) = -d(\cos^2 x)$			$t = \sin^2 x;\quad dt = \sin(2x)dx$	$t = \cos^2 x;\quad dt = -\sin(2x)dx$

Свойства интегралов: $\int (C_1 f(x) + C_2 g(x))dx = C_1 \int f(x)dx + C_2 \int g(x)dx$

Замена переменных $\int f(\varphi(x)) \cdot \varphi'(x)dx = \int f(t)dt$; где $t = \varphi(x);\quad dt = \varphi'(x)dx$

в частности: $t = \alpha x + \beta;\quad dt = \alpha dx;\ \int f(\alpha x + \beta)dx = \frac{1}{\alpha} F(\alpha x + \beta)$

Формула Ньютона-Лейбница $\int_a^b f(x)dx = F(x)\Big|_a^b = F(b) - F(a)$

Формула интегрирования по частям $\int udv = u \cdot v - \int vdu$