

$$1) \int C u dx = C \int u dx, \quad C -$$

$$2) \int (u \pm v) dx = \int u dx \pm \int v dx -$$

$$3) \int u dv = uv - \int v du \quad ($$

$$\int dx = x + C$$

$$\int x^n dx = \frac{x^{n+1}}{n+1} + C \quad (n \neq -1)$$

$$x^{\frac{a}{b}}$$

$$\int x^n dx = \frac{x^{n+1}}{n+1} + C \quad ($$

[http://mathprofi.ru/matematicheskie\\_formuly.html](http://mathprofi.ru/matematicheskie_formuly.html))

$$\int \frac{dx}{x} = \ln|x| + C$$

$$\int a^x dx = \frac{a^x}{\ln a} + C, \quad \int e^x dx = e^x + C$$

$$\int \sin x dx = -\cos x + C;$$

$$\int \cos x dx = \sin x + C;$$

$$\int \frac{1}{\cos^2 x} dx = \operatorname{tg} x + C;$$

$$\int \frac{1}{\sin^2 x} dx = -\operatorname{ctg} x + C$$

$$\int \frac{dx}{a^2 + x^2} = \frac{1}{a} \operatorname{arctg} \frac{x}{a} + C,$$

$$\int \frac{dx}{1 + x^2} = \operatorname{arctg} x + C;$$

$$\int \frac{dx}{x^2 - a^2} = \frac{1}{2a} \ln \left| \frac{x-a}{x+a} \right| + C \quad \ll \quad \gg$$

$$\int \frac{dx}{a^2 - x^2} = \frac{1}{2a} \ln \left| \frac{a+x}{a-x} \right| + C,$$

$$\int \frac{dx}{\sqrt{x^2 + A}} = \ln \left| x + \sqrt{x^2 + A} \right| + C,$$

$$\int \frac{dx}{\sqrt{x^2 - A}} = \ln \left| x + \sqrt{x^2 - A} \right| + C \quad \ll \quad \gg.$$

$$\int \frac{dx}{\sqrt{a^2 - x^2}} = \arcsin \frac{x}{a} + C$$

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« » , « » :  $\int \ln x dx = x(\ln x - 1) + C$

$$\int e^{-x^2} dx -$$

$$\int \sin x^2 dx, \int \cos x^2 dx -$$

$$\int \frac{dx}{\ln x} -$$

$$\int \frac{e^x dx}{x} -$$

$$\int \frac{\sin x dx}{x} -$$

$$\int \frac{\cos x dx}{x} -$$

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