

3. ТАБЛИЦА ОСНОВНЫХ НЕОПРЕДЕЛЕННЫХ ИНТЕГРАЛОВ

1

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

$$n \neq -1$$



2

$$\int \frac{1}{x} dx = \ln|x| + C$$

3

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

$$a > 0, \quad a \neq 1$$



4

$$\int e^x dx = e^x + C$$



5

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



6

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

7

$$\int \frac{1}{\sqrt{a^2 - x^2}} dx = \arcsin \frac{x}{a} + C$$

$$a \neq 0$$

8

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

$a \neq 0$

9

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

$$a \neq 0$$

10

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

$a \neq 0$

11

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

12

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