

## Табличное интегрирование

- 1)  $\int dx = x + C$
- 2)  $\int x^n dx = \frac{x^{n+1}}{n+1} + C, (n \neq -1)$
- 3)  $\int \frac{dx}{x} = \ln x + C, (x \neq 0)$
- 4)  $\int \cos dx = \sin x + C$
- 5)  $\int \sin dx = -\cos x + C$
- 6)  $\int \frac{dx}{\cos^2 x} = \operatorname{tg} x + C, (x \neq \frac{\pi}{2} + \pi n, n \in \mathbb{Z})$
- 7)  $\int \frac{dx}{\sin^2 x} = -\operatorname{ctg} x + C, (x \neq \pi n, n \in \mathbb{Z})$
- 8)  $\int a^x dx = \frac{a^x}{\ln a} + C, (a > 0, a \neq 1)$
- 9)  $\int e^x dx = e^x + C$
- 10)  $\int \frac{1}{\sqrt{a^2 - x^2}} = \arcsin \frac{x}{a} + C, |x| < |a|$
- 11)  $\int \frac{1}{a^2 + x^2} = \frac{1}{a} \operatorname{arctg} \frac{x}{a} + C$
- 12) "Высокий" логарифм:  
$$\int \frac{1}{x^2 - a^2} = \frac{1}{2a} \ln \left| \frac{x-a}{x+a} \right| + C, |x| \neq a$$
- 13) "Длинный" логарифм:  
$$\int \frac{1}{\sqrt{x^2 \pm a^2}} = \ln \left| x + \sqrt{x^2 \pm a^2} \right| + C, |x| > |a|$$