ТАБЛИЦА ИНТЕГРАЛОВ ОСНОВНЫХ ФУНКЦИЙ

1. $\int du = u + c$
2. $\int u^n du = \frac{u^{n+1}}{n+1} + c$
3. $\int \frac{du}{u^2} = -\frac{1}{u} + c$
4. $\int \frac{du}{\sqrt{u}} = 2\sqrt{u} + c$
5. $\int \frac{du}{u} = \ln|u| + c$
6. $\int e^u du = e^u + c$
7. $\int a^u du = \frac{a^u}{\ln a} + c$
8. $\int \sin u du = -\cos u + c$
9. $\int \cos u du = \sin u + c$
10. $\int \frac{du}{\cos^2 u} = tgu + c$
11. $\int \frac{du}{\sin^2 u} = -ctgu + c$
12. $\int \frac{du}{a^2 + u^2} = \frac{1}{a} arctg \frac{u}{a} + c$
13. $\int \frac{du}{a^2 + u^2} = -\frac{1}{a} arcctg \frac{u}{a} + c$
14. $\int \frac{du}{\sqrt{a^2 - u^2}} = \arcsin \frac{u}{a} + c$
15. $\int \frac{du}{u^2 - a^2} = \frac{1}{2a} \ln \left| \frac{u-a}{u+a} \right| + c$
16. $\int \frac{du}{a^2 - u^2} = \frac{1}{2a} \ln \left| \frac{u+a}{u-a} \right| + c$
17. $\int \frac{du}{\sqrt{u^2 \pm a}} = \ln \left| u + \sqrt{u^2 \pm a} \right| + c$

Свойства интегралов
1. $\int d(F(x)) = F(x) + c$
2. $\left(\int f(x) dx \right)' = f(x)$
3. $\int cf(x) dx = c \int f(x) dx$
4. $\int (f(x) \pm \varphi(x)) dx = \int f(x) dx \pm \int \varphi(x) dx$