

Oficjalna ściągą, którą wolno przynieść na egzamin. Przynoszenie innych ściąg jest zakazane.

1. $\int x^\alpha dx = \frac{x^{\alpha+1}}{\alpha+1} + C$ dla $\alpha \neq -1$;
2. $\int \frac{1}{x} dx = \ln |x| + C$;
3. $\int \sin \alpha x dx = -\frac{1}{\alpha} \cos \alpha x + C$;
4. $\int \cos \alpha x dx = \frac{1}{\alpha} \sin \alpha x + C$;
5. $\int \frac{dx}{\cos^2 \alpha x} = \frac{1}{\alpha} \operatorname{tg} \alpha x + C$;
6. $\int \frac{dx}{\sin^2 \alpha x} = -\frac{1}{\alpha} \operatorname{ctg} \alpha x + C$;
7. $\int a^x dx = \frac{a^x}{\ln a} + C$;
8. $\int e^{\alpha x} dx = \frac{1}{\alpha} e^{\alpha x} + C$;
9. $\int \frac{dx}{a^2 + x^2} = \frac{1}{a} \arctan \frac{x}{a} + C$;
10. $\int \frac{dx}{x^2 - a^2} = \frac{1}{2a} \ln \left| \frac{x-a}{x+a} \right| + C$;
11. $\int \frac{dx}{\sqrt{a^2 - x^2}} = \arcsin \frac{x}{a} + C$;
12. $\int \frac{dx}{\sqrt{x^2 + a}} = \ln \left| x + \sqrt{x^2 + a} \right| + C$.

$$T_n = \int \frac{dx}{(1+x^2)^n} = \frac{1}{2n-2} \frac{x}{(1+x^2)^{n-1}} + \frac{2n-3}{2n-2} T_{n-1},$$

$$S_n = \int \sin^n x dx = -\frac{1}{n} \sin^{n-1} x \cos x + \frac{n-1}{n} S_{n-2},$$

$$K_n = \int \cos^n x dx = \frac{1}{n} \sin x \cos^{n-1} x + \frac{n-1}{n} K_{n-2}.$$

Przydatne tożsamości trygonometryczne

1. $\sin 2x = 2 \sin x \cos x$
2. $\cos 2x = \cos^2 x - \sin^2 x$
3. $\sin^2 x = \frac{1 - \cos 2x}{2}$
4. $\cos^2 x = \frac{1 + \cos 2x}{2}$
5. Jeśli $\operatorname{tg} \frac{x}{2} = t$, to $\sin x = \frac{2t}{1+t^2}$, $\cos x = \frac{1-t^2}{1+t^2}$, $dx = \frac{2}{1+t^2} dt$.