

אינטגרלים מיידיים

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

$$2. \int a^x dx = \frac{a^x}{\ln a} + C$$

$$3. \int e^x dx = e^x + C$$

$$4. \int \frac{dx}{x} = \ln|x| + C$$

$$5. \int \sin x dx = -\cos x + C$$

$$6. \int \cos x dx = \sin x + C$$

$$7. \int \frac{dx}{\sin ax} = \frac{1}{a} \ln \left| \tan \frac{ax}{2} \right| + C$$

$$8. \int \frac{dx}{\cos ax} = \frac{1}{a} \ln \left| \tan \left(\frac{\pi}{4} + \frac{ax}{2} \right) \right| + C$$

$$9. \int \frac{dx}{\sin^2 ax} = -\frac{1}{a} \cot ax + C$$

$$10. \int \frac{dx}{\cos^2 ax} = \frac{1}{a} \tan ax + C$$

$$11. \int \tan x dx = -\ln|\cos x| + C$$

$$12. \int \cot x dx = \ln|\sin x| + C$$

$$13. \int \frac{dx}{a^2 + x^2} = \frac{1}{a} \arctan \frac{x}{a} + C$$

$$14. \int \frac{dx}{a^2 - x^2} = \frac{1}{2a} \ln \left| \frac{a+x}{a-x} \right| + C$$

$$15. \int \frac{dx}{x^2 - a^2} = \frac{1}{2a} \ln \left| \frac{a-x}{a+x} \right| + C$$

$$16. \int \frac{dx}{\sqrt{a^2 - x^2}} = \arcsin \frac{x}{a} + C$$

$$17. \int \frac{dx}{\sqrt{x^2 \pm a^2}} = \ln \left| x + \sqrt{x^2 \pm a^2} \right| + C$$

$$18. \int \sqrt{x^2 + a^2} dx = \frac{x\sqrt{x^2 + a^2}}{2} + \frac{a^2}{2} \ln \left(x + \sqrt{x^2 + a^2} \right) + C$$

$$19. \int \sqrt{x^2 - a^2} dx = \frac{x\sqrt{x^2 - a^2}}{2} - \frac{a^2}{2} \ln \left(x + \sqrt{x^2 - a^2} \right) + C$$

$$20. \int \sqrt{a^2 - x^2} dx = \frac{x\sqrt{a^2 - x^2}}{2} + \frac{a^2}{2} \arcsin \frac{x}{a} + C$$