

Derivate

Integrale

1. $c' = 0$

2. $x' = 1$

3. $(x^n)' = nx^{n-1}$

4. $(\sqrt{x})' = \frac{1}{2\sqrt{x}}$

5. $\left(\frac{1}{x}\right)' = -\frac{1}{x^2}$

6. $(\ln x)' = \frac{1}{x}$

7. $(e^x)' = e^x$

8. $(a^x)' = a^x \ln a$

9. $(\sin x)' = \cos x$

10. $(\cos x)' = -\sin x$

11. $(\operatorname{tg} x)' = \frac{1}{\cos^2 x} = 1 + \operatorname{tg}^2 x$

12. $(\operatorname{ctg} x)' = -\frac{1}{\sin^2 x}$

13. $(\operatorname{arctg} x)' = \frac{1}{x^2 + 1}$

14. $(\operatorname{arcsin} x)' = \frac{1}{\sqrt{1-x^2}}$

15. $(\sqrt{x^2 \pm a^2})' = \frac{x}{\sqrt{x^2 \pm a^2}}$

16. $(\sqrt{a^2 - x^2})' = -\frac{x}{\sqrt{a^2 - x^2}}$

17. $(\operatorname{arcctg} x)' = -\frac{1}{x^2 + 1}$

18. $(\operatorname{arccos} x)' = -\frac{1}{\sqrt{1-x^2}}$

19. $(\sqrt[n]{x})' = \frac{1}{n\sqrt[n]{x^{n-1}}}$

20. $(\log_a x)' = \frac{1}{x \ln a}$

1. $\int dx = x + C$

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

3. $\int \sqrt{x} dx = \frac{2}{3} x\sqrt{x} + C$

4. $\int \frac{1}{x^2} dx = -\frac{1}{x} + C$

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

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

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

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

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

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

11. $\int \frac{1}{\sin^2 x} dx = -\operatorname{ctg} x + C$

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

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

14. $\int \frac{x}{\sqrt{x^2 \pm a^2}} dx = \sqrt{x^2 \pm a^2} + C$

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

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

17. $\int \frac{1}{\sqrt{x^2 + a^2}} dx = \ln(x + \sqrt{x^2 + a^2}) + C$

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

19. $\int \operatorname{tg} x dx = -\ln |\cos x| + C$

20. $\int \operatorname{ctg} x dx = \ln |\sin x| + C$

21. $\int \frac{1}{ax+b} dx = \frac{1}{a} \ln|ax+b| + C$

22. $\int \frac{x}{x^2 \pm a^2} dx = \frac{1}{2} \ln|x^2 \pm a^2| + C$