FORMULES D'INTÉGRATION

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1 $\int 0\,dx = k$

2 $\int x^r dx = \frac{x^{r+1}}{r+1} + k$ (r&sup1 ; -1)

3 $\int a^x dx = \frac{a^x}{\ln a} + k$

4 $\int e^x dx = e^x + k$

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

6 $\int \sin x\ dx = -\cos x + k$

7 $\int \cos x\ dx = \sin x + k$

8 $\int \sec^2 x\ dx = \tan x + k$

9 $\int \csc^2 x\ dx = -\cot x + k$

10 $\int \sec x \tan x\ dx = \sec x + k$

11 $\int \csc x \cot x\ dx = -\csc x + k$

17 $\int \sec x\ dx = \ln|\sec x + \tan x| + k$

18 $\int \operatorname{cosec} x\ dx = \ln|\operatorname{cosec} x - \cot x| + k$

19 $\int \frac{1}{\sqrt{a^2 - x^2}} dx = \arcsin\left(\frac{x}{a}\right) + k$

20 $\int \frac{1}{a^2 + x^2} dx = \frac{1}{a}\arctan\left(\frac{x}{a}\right) + k$

21 $\int \frac{1}{x\sqrt{x^2 - a^2}} dx = \frac{1}{a}\operatorname{arc\,sec}\left(\frac{x}{a}\right) + k$

22 $\int \ln x\ dx = x\ln x - x + k$

23 $\int \arcsin x\ dx = x\arcsin x + \sqrt{1 - x^2} + k$

24 $\int \arccos x\ dx = x\arccos x - \sqrt{1 - x^2} + k$

25 $\int \arctan x\ dx = x\arctan x - \frac{1}{2}\ln(1 + x^2) + k$

26 $\int \frac{1}{x^2 - a^2} dx = \frac{1}{2a}\ln\left|\frac{x - a}{x + a}\right| + k$

27 $\int \frac{1}{a^2 - x^2} dx = \frac{1}{2a}\ln\left|\frac{x + a}{x - a}\right| + k$

12 $\int \frac{1}{\sqrt{1-x^2}}\,dx = \arcsin x + k$

13 $\int \frac{1}{1+x^2}\,dx = \arctan x + k$

14 $\int \frac{1}{x\sqrt{x^2-1}}\,dx = \operatorname{arc\,sec} x + k$

15 $\int \tan x\,dx = \ln\left|\sec x\right| + k$

16 $\int \cot x\,dx = \ln\left|\sin x\right| + k$

28 $\int \frac{1}{\sqrt{x^2+a^2}}\,dx = \ln\left|x + \sqrt{x^2+a^2}\right| + k$

29 $\int \frac{1}{\sqrt{x^2-a^2}}\,dx = \ln\left|x + \sqrt{x^2-a^2}\right| + k$

30 $\int \sqrt{a^2-x^2}\,dx = \frac{x\sqrt{a^2-x^2}}{2} + \frac{a^2}{2}\arcsin\left(\frac{x}{a}\right) + k$

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$$\int \sqrt{a^2+x^2}\,dx = \frac{x\sqrt{a^2+x^2}}{2} + \frac{a^2}{2}\ln\left|x + \sqrt{x^2+a^2}\right| + k$$

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$$\int \sqrt{x^2-a^2}\,dx = \frac{x\sqrt{x^2-a^2}}{2} - \frac{a^2}{2}\ln\left|x + \sqrt{x^2-a^2}\right| + k$$

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