

## FORMULES D'INTÉGRATION

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$$1 \int 0 dx = k$$

$$2 \int x^r dx = \frac{x^{r+1}}{r+1} + k \quad (r \neq -1)$$

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

$$31 \int \sqrt{a^2+x^2} dx = \frac{x\sqrt{a^2+x^2}}{2} + \frac{a^2}{2} \ln \left| x + \sqrt{x^2+a^2} \right| + k$$

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

$$32 \int \sqrt{x^2-a^2} dx = \frac{x\sqrt{x^2-a^2}}{2} - \frac{a^2}{2} \ln \left| x + \sqrt{x^2-a^2} \right| + k$$

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| <a href="#">page précédente</a> |
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