Table of Indefinite Integrals

Throughout this table, a and b are given constants, independent of x and C is an arbitrary constant.

$f(x)$	$F(x) = \int f(x)\ dx$
$af(x) + bg(x)$	$a\int f(x)\ dx + b\int g(x)\ dx\ +\ C$
$f(x) + g(x)$	$\int f(x)\ dx + \int g(x)\ dx\ +\ C$
$f(x) - g(x)$	$\int f(x)\ dx - \int g(x)\ dx\ +\ C$
$af(x)$	$a\int f(x)\ dx\ +\ C$
$u(x)v'(x)$	$u(x)v(x) - \int u'(x)v(x)\ dx\ +\ C$
$f\big(y(x)\big)y'(x)$	$F\big(y(x)\big)$ where $F(y) = \int f(y)\ dy$
1	$x + C$
a	$ax + C$
x^a	$\frac{x^{a+1}}{a+1} + C$ if $a \ne -1$
$\frac{1}{x}$	$\ln\lvert x\rvert + C$
$g(x)^a g'(x)$	$\frac{g(x)^{a+1}}{a+1} + C$ if $a \ne -1$
$\sin x$	$-\cos x + C$
$g'(x)\sin g(x)$	$-\cos g(x) + C$
$\cos x$	$\sin x + C$
$\tan x$	$\ln\lvert\sec x\rvert + C$
$\csc x$	$\ln\lvert\csc x - \cot x\rvert + C$
$\sec x$	$\ln\lvert\sec x + \tan x\rvert + C$
$\cot x$	$\ln\lvert\sin x\rvert + C$
$\sec^2 x$	$\tan x + C$
$\csc^2 x$	$-\cot x + C$
$\sec x\tan x$	$\sec x + C$
$\csc x\cot x$	$-\csc x + C$
e^x	$e^x + C$
$e^{g(x)}g'(x)$	$e^{g(x)} + C$
e^{ax}	$\frac{1}{a}\ e^{ax} + C$
a^x	$\frac{1}{\ln a}\ a^x + C$
$\ln x$	$x\ln x - x + C$
$\frac{1}{\sqrt{1-x^2}}$	$\arcsin x + C$
$\frac{g'(x)}{\sqrt{1-g(x)^2}}$	$\arcsin g(x) + C$
$\frac{1}{\sqrt{a^2-x^2}}$	$\arcsin\frac{x}{a} + C$
$\frac{1}{1+x^2}$	$\arctan x + C$
$\frac{g'(x)}{1+g(x)^2}$	$\arctan g(x) + C$
$\frac{1}{a^2+x^2}$	$\frac{1}{a}\arctan\frac{x}{a} + C$
$\frac{1}{x\sqrt{x^2-1}}$	$\operatorname{arcsec} x + C$