

In the following formulas, let a, b, c, n be constants, and
 $u = f(x); v = g(x); w = h(x)$

General Formulas

1	$\int a dx = ax + c$
2	$\int af(x) dx = a \int f(x) dx$
3	$\int x^n dx = \frac{1}{n+1} x^{n+1} + c \quad (n \neq -1)$
4	$\int (u \pm v \pm w) dx = \int u dx \pm \int v dx \pm \int w dx$
5	$\int u dv = uv - \int v du$ Integration by parts
6	$\int F(u) dx = \int \frac{F(u)}{u'} du$
7	$\int \frac{1}{x} dx = \ln x + c$
8	$\int \frac{1}{x^2 + a^2} dx = \frac{1}{a} \tan^{-1} \frac{x}{a} + c$
9	$\int \frac{1}{x^2 - a^2} dx = \frac{1}{2a} \ln \left \frac{x-a}{x+a} \right + c$

Trigonometric Functions

10	$\int \sin x dx = -\cos x + c$	11	$\int \cos x dx = \sin x + c$
12	$\int \tan x dx = \ln \sec x + c$	13	$\int \cot x dx = \ln \sin x + c$
14	$\int \sec^2 x dx = \tan x + c$	15	$\int \csc^2 x dx = -\cot x + c$
16	$\int \tan^2 x dx = \tan x - x + c$	17	$\int \cot^2 x dx = \cot x - x + c$
18	$\int \sec x \tan x dx = \sec x + c$	19	$\int \csc x \cot x dx = -\csc x + c$
20	$\int \sec x dx = \ln \sec x + \tan x + c$	21	$\int \csc x dx = \ln \csc x - \cot x + c$
22	$\int \sin^2 x dx = \frac{1}{2} x - \frac{1}{4} \sin 2x + c$	23	$\int \cos^2 x dx = \frac{1}{2} x + \frac{1}{4} \sin 2x + c$
24	$\int \sin^n x dx = -\frac{1}{n} \sin^{n-1} x \cos x + \frac{n-1}{n} \int \sin^{n-2} x dx$		
25	$\int \cos^n x dx = \frac{1}{n} \cos^{n-1} x \sin x + \frac{n-1}{n} \int \cos^{n-2} x dx$		

Hyperbolic Functions			
26	$\int \sinh x dx = \cosh x + c$	27	$\int \cosh x dx = \sinh x + c$
28	$\int \tanh x dx = \ln \cosh x + c$	29	$\int \coth x dx = \ln \sinh x + c$
30	$\int \operatorname{sech} x dx = \sin^{-1}(\tanh x) + c$	31	$\int \operatorname{csch} x dx = \ln \tanh \frac{x}{2} + c$
32	$\int \operatorname{sech}^2 x dx = \tanh x + c$	33	$\int \operatorname{csch}^2 x dx = -\coth x + c$
34	$\int \tanh^2 x dx = x - \tanh x + c$	35	$\int \coth^2 x dx = x - \coth x + c$
36	$\int \operatorname{sech} x \tanh x dx = -\operatorname{sech} x + c$	37	$\int \operatorname{csch} x \coth x dx = -\operatorname{csch} x + c$
38	$\int \sinh^2 x dx = \frac{\sinh 2x}{4} - \frac{x}{2} + c$	39	$\int \cosh^2 x dx = \frac{\sinh 2x}{4} + \frac{x}{2} + c$
Exponential and Logarithmic Functions			
40	$\int e^x dx = e^x + c$	41	$\int a^x dx = \frac{a^x}{\ln a} + c$
42	$\int \ln x dx = x(\ln x - 1) + c$	43	$\int \log_a x dx = \frac{x}{\ln a} (\ln x - 1) + c$
44	$\int x e^{ax} dx = \frac{e^{ax}}{a^2} (ax - 1) + c$	45	$\int \frac{e^{ax}}{x} dx = \ln x + \sum_{i=1}^{\infty} \frac{(ax)^i}{i \cdot i!} + c$
46	$\int x^2 e^{ax} dx = e^{ax} \left(\frac{x^2}{a} - \frac{2x}{a^2} + \frac{2}{a^3} \right) + c$		
47	$\int x^n e^{ax} dx = \frac{1}{a} x^n e^{ax} - \frac{n}{a} \int x^{n-1} e^{ax} dx$		
48	$\int \frac{e^{ax}}{x^n} dx = \frac{1}{n-1} \left(-\frac{e^{ax}}{x^{n-1}} + a \int \frac{e^{ax}}{x^{n-1}} dx \right) + c \quad (n \neq 1)$		
49	$\int x^n \ln x dx = \frac{x^{n+1}}{(n+1)^2} [(n+1) \ln x - 1] + c$		