Basic integration formulas

1. $\int dx$ = x + c
2. $\int K$dx = Kx + c
3. $\int x^m$ dx = $\frac{x^{m+1}}{m+1}$ + c
4. $\int sinx$ dx = - cosx + c
5. $\int sinax$ dx = - $\frac{1}{a}$ cosax + c
6. $\int cosx$ dx = sinx + c
7. $\int cosax$ dx = $\frac{1}{a}$ sinax + c
8. $\int sec^2 x$ dx = tanx + c
9. $\int sec^2 ax$ dx = $\frac{1}{a}$ tanax + c
10. $\int csc^2 x$dx = - cotx + c
11. $\int csc^2 ax$dx = - $\frac{1}{a}$ cotax + c
12. $\int secxtanx$dx = secx + c
13. $\int secaxtanax$dx = $\frac{1}{a}$ secax + c
14. $\int cscxcotx$dx = - cscx + c
15. $\int cscaxcotax$dx = - $\frac{1}{a}$ cscax + c

16. $\int \frac{1}{x}\, dx = lnx + c$

17. $\int e^x\ dx = e^x + c$

18. $\int tanx\ dx = -ln|cosx| + c$ or $\ln|secx| + c$

19. $\int cotx\ dx = ln|sinx| + c$ or $-\ln|cscx| + c$

$$\int \big(f(x) + g(x)\big)\, dx = \int f(x)\, dx + \int g(x)\, dx$$

$$\int \big(f(x) - g(x)\big)\, dx = \int f(x)\, dx - \int g(x)\, dx$$

Trigonometric identities:

$$cos^2x = \frac{1}{2}\,(1 + cos2x)$$

$$sin^2x = \frac{1}{2}\,(1 - cos2x)$$

$$tan^2x + 1 = sec^2x$$

$$cot^2x + 1 = csc^2x$$

Sec x = $\frac{1}{\cos x}$

Cscx = $\frac{1}{\sin x}$

Cotx = $\frac{1}{\tan x}$