Integral Formulas

1. $\int x^n \, dx = \dfrac{1}{n+1} x^{n+1} + C, \ n \neq -1$

2. $\int dx = x + C$

3. $\int \sin x \, dx = -\cos x + C$

4. $\int \cos x \, dx = \sin x + C$

5. $\int \sin(kx) \, dx = -\dfrac{1}{k} \cos(kx) + C$

6. $\int \cos(kx) \, dx = \dfrac{1}{k} \sin(kx) + C$

7. $\int \sec^2 x \, dx = \tan x + C$

8. $\int \sec x \tan x \, dx = \sec x + C$

9. $\int \csc x \cot x \, dx = -\csc x + C$

10. $\int \csc^2 x \, dx = -\cot x + C$

11. $\int e^x \, dx = e^x + C$

12. $\int e^{ax} \, dx = \dfrac{1}{a} e^{ax} + C$

13. $\int \dfrac{1}{x} \, dx = \ln |x| + C$

14. $\int a^x \, dx = \dfrac{1}{\ln a} a^x + C$

15. $\int \dfrac{1}{\sqrt{1 - x^2}} \, dx = \sin^{-1} x + C$

16. $\int \dfrac{1}{1 + x^2} \, dx = \tan^{-1} x + C$

17. $\int \dfrac{1}{x\sqrt{x^2 - 1}} \, dx = \sec^{-1} x + C$

$\int \cot x = \ln | \sin(x)| + C$

$\int \csc x = \ln |\csc x - \cot x| + C$

$\int \sec^2 x \, dx \longrightarrow \tan x + C$

$\int \sec x \tan x \, dx \longrightarrow \sec x + C$

$\int \tan(x) = \ln |\sec(x)| + C$

$\int \sin x$
$\downarrow \int$
$-\cos x$

if $kx \longrightarrow \dfrac{1}{k}(x)$