
INTEGRATION FORMULAS:

$$\int u^n du = \frac{u^{n+1}}{n+1} + c; \quad n \neq -1$$

$$\int \frac{du}{u} = \ln|u| + c$$

$$\int (e^u) du = e^u + c$$

$$\int (a^u) du = \frac{a^u}{\ln a} + c$$

$$\int (\sin u) du = -\cos u + c$$

$$\int (\cos u) du = \sin u + c$$

$$\int (\sec^2 u) du = \tan u + c$$

$$\int (\csc^2 u) du = -\cot u + c$$

$$\int (\sec u \tan u) du = \sec u + c$$

$$\int (\csc u \cot u) du = -\csc u + c$$

$$\int \sec u du = \ln|\sec u + \tan u| + c$$

$$\int \csc u du = \ln|\csc u - \cot u| + c$$

$$\int \tan u du = \ln|\sec u| + c$$

$$\int \cot u du = \ln|\sin u| + c$$

$$\int \sin^2 u du = \frac{1}{2}u - \frac{1}{4}\sin 2u + c$$

$$\int \cos^2 u du = \frac{1}{2}u + \frac{1}{4}\sin 2u + c$$

$$\int \frac{du}{\sqrt{a^2 - u^2}} = \sin^{-1} \frac{u}{a} + C$$

$$\int \frac{du}{u^2 + a^2} = \frac{1}{a} \tan^{-1} \frac{u}{a} + C$$

$$\int \frac{du}{u\sqrt{u^2 - a^2}} = \frac{1}{a} \sec^{-1} \frac{u}{a} + C$$