

Table of Basic Integrals¹

$$(1) \quad \int \sec x \, dx = \ln |\sec x + \tan x| + C$$

$$(2) \quad \int \csc x \, dx = -\ln |\csc x + \cot x| + C$$

$$(3) \quad \int \frac{1}{\sqrt{a^2 - x^2}} \, dx = \sin^{-1} \frac{x}{a} + C$$

$$(4) \quad \int \frac{a}{x\sqrt{x^2 - a^2}} \, dx = \sec^{-1} \frac{x}{a} + C$$

$$(5) \quad \int \frac{1}{\sqrt{x^2 - a^2}} \, dx = \cosh^{-1} \frac{x}{a} + C \\ = \ln(x + \sqrt{x^2 - a^2}) + C$$

$$(6) \quad \int \frac{1}{\sqrt{x^2 + a^2}} \, dx = \sinh^{-1} \frac{x}{a} + C \\ = \ln(x + \sqrt{x^2 + a^2}) + C$$

¹©2014. From <http://integral-table.com>, last revised September 10, 2018. This material is provided as is without warranty or representation about the accuracy, correctness or suitability of this material for any purpose. This work is licensed under the Creative Commons Attribution-Noncommercial-ShareAlike United States License.

Trigonometric Identities²

$$(7) \quad \cos^2(x) + \sin^2(x) = 1 \qquad (11) \quad \sin(\alpha \pm \beta) = \sin(\alpha) \cos(\beta) \pm \cos(\alpha) \sin(\beta)$$

$$(8) \quad \tan^2(x) + 1 = \sec^2(x) \qquad (12) \quad \sin(\alpha \pm \beta) = \cos(\alpha) \cos(\beta) \mp \sin(\alpha) \sin(\beta)$$

$$(9) \quad 1 + \cot^2(x) = \csc^2(x) \qquad (13) \quad \sin^2(x) = \frac{1}{2}(1 - \cos(2x))$$

$$(10) \quad \sin(2x) = 2 \sin(x) \cos(x) \qquad (14) \quad \cos^2(x) = \frac{1}{2}(1 + \cos(2x))$$

²This material is provided as is without warranty or representation about the accuracy. An effort was made to ensure correctness and accuracy of the information; however, no guarantee of the such is provided.