Resources
- Cool Tools
- Formulas & Tables
- References
- Test Preparation
- Study Tips
- Wonders of Math

Search

Table of Integrals

(**Math** | **Calculus** | **Integrals** | **Table Of**)

Power of x.

$\int x^n\,dx = x^{(n+1)} / (n+1) + C$ $(n \neq -1)$ Proof	$\int 1/x\,dx = \ln\lvert x\rvert + C$

Exponential / Logarithmic

$\int e^x\,dx = e^x + C$ Proof	$\int b^x\,dx = b^x / \ln(b) + C$ Proof, Tip!
$\int \ln(x)\,dx = x\ln(x) - x + C$ Proof	

Trigonometric

$\int \sin x\,dx = -\cos x + C$ Proof	$\int \csc x\,dx = -\ln\lvert CSC\ x + \cot x\rvert + C$ Proof
$\int COs\ x\,dx = \sin x + C$ Proof	$\int \sec x\,dx = \ln\lvert\sec x + \tan x\rvert + C$ Proof
$\int \tan x\,dx = -\ln\lvert COs\ x\rvert + C$ Proof	$\int \cot x\,dx = \ln\lvert\sin x\rvert + C$ Proof

Trigonometric Result

$\int COs\ x\,dx = \sin x + C$ Proof	$\int CSC\ x \cot x\,dx = -CSC\ x + C$ Proof
$\int \sin x\,dx = COs\ x + C$ Proof	$\int \sec x \tan x\,dx = \sec x + C$ Proof
$\int \sec^2 x\,dx = \tan x + C$ Proof	$\int \csc^2 x\,dx = -\cot x + C$ Proof

Inverse Trigonometric

$\int \arcsin x\,dx = x\arcsin x + \sqrt{(1-x^2)} + C$
$\int \operatorname{arccsc} x\,dx = x\arccos x - \sqrt{(1-x^2)} + C$
$\int \arctan x\,dx = x\arctan x - (1/2)\ln(1+x^2) + C$

Inverse Trigonometric Result

$\int \frac{dx}{\sqrt{(1-x^2)}} = \arcsin x + C$	**Useful Identities** $\arccos x = \pi/2 - \arcsin x$ $(-1 <= x <= 1)$

$\int \frac{dx}{x\sqrt{(x^2 - 1)}} = \text{arcsec}\lvert x\rvert + C$	arccsc x = π/2 - arcsec x (|x| >= 1) arccot x = π/2 - arctan x (for all x)
$\int \frac{dx}{1 + x^2} = \arctan x + C$	

Hyperbolic

$\int \sinh x\, dx = \cosh x + C$ Proof	$\int \text{csch } x\, dx = \ln \lvert\tanh(x/2)\rvert + C$ Proof
$\int \cosh x\, dx = \sinh x + C$ Proof	$\int \text{sech } x\, dx = \arctan(\sinh x) + C$
$\int \tanh x\, dx = \ln(\cosh x) + C$ Proof	$\int \coth x\, dx = \ln \lvert\sinh x\rvert + C$ Proof

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Click on Proof for a proof/discussion of a theorem.

To solve a more complicated integral, see The Integrator at http://integrals.wolfram.com/