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Table of Integrals
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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

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

Inverse Trigonometric Result

$$\int \frac{dx}{\sqrt{(1 - x^2)}} = \arcsin x + C$$

$$\int \frac{dx}{x \sqrt{(x^2 - 1)}} = \text{arcsec} |x| + C$$

$$\int \frac{dx}{1 + x^2} = \arctan x + C$$

Useful Identities

$\arccos x = \pi/2 - \arcsin x$
$(-1 <= x <= 1)$

$\text{arccsc } x = \pi/2 - \text{arcsec } x$
$(|x| >= 1)$

$\text{arccot } x = \pi/2 - \arctan x$
$(\text{for all } x)$

Hyperbolic

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