

DERIVATIVE & INTEGRAL FORMULAS

AP CALC: DERIVATIVES
$\frac{d}{dx}(x^n) =$
$\frac{d}{dx}(e^u) =$
$\frac{d}{dx}(\ln u) =$
$\frac{d}{dx}(a^u) =$
$\frac{d}{dx}(\log_a u) =$
$\frac{d}{dx}(\sin u) =$
$\frac{d}{dx}(\cos u) =$
$\frac{d}{dx}(\tan u) =$
$\frac{d}{dx}(\sec u) =$
$\frac{d}{dx}(\cot u) =$
$\frac{d}{dx}(\csc u) =$
$\frac{d}{dx}(\sin^{-1} u) =$
$\frac{d}{dx}(\cos^{-1} u) =$
$\frac{d}{dx}(\tan^{-1} u) =$
$\frac{d}{dx}(\cot^{-1} u) =$
$\frac{d}{dx}(\sec^{-1} u) =$
$\frac{d}{dx}(\csc^{-1} u) =$

Integrals Resulting in Other Inverse Trigonometric Functions

There are six inverse trigonometric functions. However, only three integration formulas are noted in the rule on integration formulas resulting in inverse trigonometric functions because the remaining three are negative versions of the ones we use. The only difference is whether the integrand is positive or negative. Rather than memorizing three more formulas, if the integrand is negative, simply factor out -1 and evaluate the integral using one of the formulas already provided.

AP CALC: INTEGRALS

$$\int x^n dx = -$$

$$\int e^x dx =$$

$$\int \frac{1}{x} dx =$$

$$\int a^x dx =$$

$$\int \frac{1}{x \ln a} dx =$$

$$\int \sin x dx =$$

$$\int \cos x dx =$$

$$\int \sec^2 x dx =$$

$$\int \sec x \tan x dx =$$

$$\int \csc^2 x dx =$$

$$\int \csc x \cot x dx =$$

$$\int \frac{1}{\sqrt{1-x^2}} dx =$$

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

$$\int \frac{1}{|x|\sqrt{x^2-1}} dx =$$