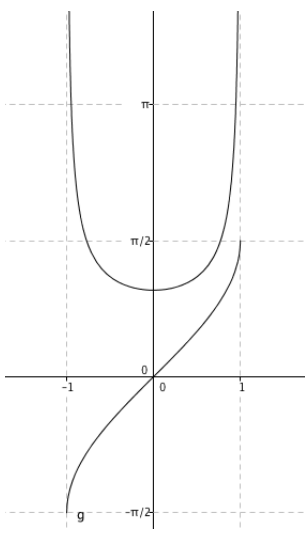
Derivatives of Inverse Trigonometric Functions

Introduction

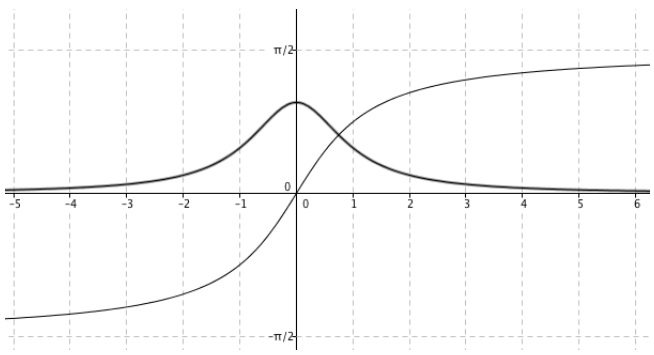
Example 1.

Find the derivative of $\arcsin x$.



Example 2.

Find the derivative of $\arctan x$.



Derivatives of Inverse Trigonometric Functions

$\dfrac{d}{dx}(\sin^{-1} x)$	$\dfrac{d}{dx}(\csc^{-1} x)$
$\dfrac{d}{dx}(\cos^{-1} x)$	$\dfrac{d}{dx}(\sec^{-1} x)$
$\dfrac{d}{dx}(\tan^{-1} x)$	$\dfrac{d}{dx}(\cot^{-1} x)$

Example 3.

Differentiate

1. $y = \dfrac{1}{\sin^{-1} x}$

2. $f(x) = x \arctan \sqrt{x}$