

Derivatives of Inverse Trigonometric Functions

$$\frac{d}{dx} \sin^{-1}(x) = \frac{1}{\sqrt{1-x^2}}$$

$$\frac{d}{dx} [\cos^{-1}(x)] = -\frac{1}{\sqrt{1-x^2}}$$

$$\frac{d}{dx} [\tan^{-1}(x)] = \frac{1}{x^2+1}$$

$$\frac{d}{dx} [\cot^{-1}(x)] = -\frac{1}{x^2+1}$$

$$\frac{d}{dx} [\sec^{-1}(x)] = \frac{1}{|x|\sqrt{x^2-1}}$$

$$\frac{d}{dx} [\csc^{-1}(x)] = -\frac{1}{|x|\sqrt{x^2-1}}$$