

LESSON 9: DERIVATIVES OF TRIG FUNCTIONS

Objective: 1. To state and apply the rules for differentiating and integrating inverse trig functions

Derivatives of Inverse Trig Functions

$$D(\sin^{-1} u) = \frac{1}{\sqrt{1-u^2}} \frac{du}{dx}$$

$$D(\cos^{-1} u) = \frac{-1}{\sqrt{1-u^2}} \frac{du}{dx}$$

$$D(\tan^{-1} u) = \frac{1}{1+u^2} \frac{du}{dx}$$

$$D(\cot^{-1} u) = \frac{-1}{1+u^2} \frac{du}{dx}$$

$$D(\sec^{-1} u) = \frac{1}{|u|\sqrt{u^2-1}} \frac{du}{dx}$$

$$D(\csc^{-1} u) = \frac{-1}{|u|\sqrt{u^2-1}} \frac{du}{dx}$$

Examples

1. Verify the six inverse trig identities stated above.
2. $\frac{d}{dx}[\arcsin 2x] =$