

Student Name: _____

Score: _____

Derivatives of Inverse of Trigonometric Functions

Find the derivatives of inverse of trigonometric functions:

$$y = 7\sin^{-1} 10x$$

$$y = \cos^{-1}(1 - 3x^2)$$

$$y = \tan^{-1} 2x$$

$$y = \frac{29}{4} \cot^{-1} 2x$$

$$y = \sec^{-1} 2x$$

$$y = \sin^{-1}(2x + 1)$$

$$y = x^2 + \cos^{-1} x$$

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Answer key

Derivatives of Inverse of Trigonometric Functions

$$\frac{dy}{dx} = \frac{70}{\sqrt{1-100x^2}}$$

$$\frac{dy}{dx} = \frac{6x}{\sqrt{1-(1-3x^2)^2}} \text{ or } \frac{6}{\sqrt{6-9x^2}}$$

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

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

$$\frac{dy}{dx} = \frac{1}{3(1-x^2)^2}$$

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

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$$\frac{dy}{dx} = \frac{2}{\sqrt{1-(2x+1)^2}} \text{ or } \frac{1}{\sqrt{-x^2-x}}$$

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