3.4

Note Title 8/16/2007

Derivatives of Trig functions

* Use Radians

$\frac{d}{dx}(\sin x) = \cos x$ $\quad$ $\frac{d}{dx}(\csc x) = -\csc x \cot x$

$\frac{d}{dx}(\cos x) = -\sin x$ $\quad$ $\frac{d}{dx}(\sec x) = \sec x \tan x$

$\frac{d}{dx}(\tan x) = \sec^2 x$ $\quad$ $\frac{d}{dx}(\cot x) = -\csc^2 x$

(ex) Differentiate $f(x) = \sqrt{x}\sin x$

$$f'(x) = \sqrt{x}\cos x + \sin x \tfrac{1}{2}x^{-1/2}$$

$$= \sqrt{x}\cos x + \frac{\sin x}{2\sqrt{x}}$$