

4.1 Trig. Derivatives I

Wednesday, June 12, 2019 7:14 AM

* if function starts with "c" then derivative is negative

$$\frac{d}{dx} (\sin x) = \cos x$$

"sine x"

$$\frac{d}{dx} (\csc x) = -\csc x \cdot \cot x$$

"cosecant x"

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

"cosine x"

$$\frac{d}{dx} (\sec x) = \sec x \cdot \tan x$$

"secant x"

$$\frac{d}{dx} (\tan x) = \sec^2 x$$

"tangent x"

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

"cotangent x"

$$\frac{d}{dx} (\tan x) \rightarrow \frac{d}{dx} \left(\frac{\sin x}{\cos x} \right) \rightarrow \frac{B \cdot DT - T \cdot DB}{B^2}$$

$$= \frac{\cos x \cdot (\cos x) - \sin x \cdot (-\sin x)}{(\cos x)^2}$$

$$\rightarrow \frac{\cos^2 x + \sin^2 x}{\cos^2 x} \rightarrow \frac{1}{\cos^2 x} \rightarrow \sec^2 x$$