**Mr. Visca’s: Calculus (Chpt 3.5)**

**Chpt 3 – Day 7: Derivatives of Trig Functions**

**3.5 Derivatives of Trig Functions**

Memorize!!!

$\frac{d}{dx}sin\left(x\right)=$ $\frac{d}{dx}csc\left(x\right)=$

$\frac{d}{dx}cos\left(x\right)=$ $\frac{d}{dx}sec\left(x\right)=$

$\frac{d}{dx}tan\left(x\right)=$ $\frac{d}{dx}cot\left(x\right)=$

Example 1

*y* = *x*2sin *x* Find *y*'

Jerk - A sudden change in \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_; \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of acceleration

Example 2

Acceleration due to gravity is g = -9.8 m/sec2

a(t) = -9.8

a'(t) = j(t) =

No jerk explains why we don't experience motion sickness

while we're just sitting around.

Example 3

Jerk of simple harmonic motion s(t) = 5 cos t

 v(t) =

 a(t) =

 j(t) =

Example 4

Find the equation of the tangent line of $y=\frac{\tan(x)}{x}$ at x = 2.

(Graphing calculator required)

Example 5

*y* = sec *x* Find *y*''

HW: section 3.5

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