MTH 201 -- Calculus
Module 5B: Derivatives of other trigonometric functions

October 7-8, 2020

Agenda for today

- Polling activity over Daily Preparation + Q&A time
- Polling: Review of derivative computation rules so far
- Jamboard: Practice with derivative computation rules, including the new trig functions
- Q/A + Feedback time

What we can differentiate so far:

- Constant, power, and polynomial functions
- "Pure" exponential functions (like $y = 3^x$ but not $y = 3^{\cos(x)}$, etc.)
- All six trigonometric functions
- Sums, differences, constant multiples, products and/or quotients of functions

NOTHING ELSE HAS A RULE YET

Example: y = sqrt(cos(x))

$$\frac{d}{dx}\left[e^x\right]$$

- e^x
- xe^{x-1}
- xe^{x+1}
- We know how to compute this, but it's none of the above
- We don't know how to compute this yet

To 0

$$\frac{d}{dx}\left[x^2 + 2^x\right]$$

- $2x + 2^x$
- $2x + x2^{x-1}$
- $2x + 2^x \ln(x)$
- We know how to compute this, but it's none of the above
- We don't know how to compute this yet

To 0

$$\frac{d}{dt}\left[t^2 \cdot \sin(t)\right]$$

- $2t\cos(t)$
- $2t\sin(t)$
- $2t \cdot (-\cos(t))$
- $2t \cdot (-\sin(t))$
- We know how to compute this, but it's none of the above
- We don't know how to compute this yet

To 0

The slope of the tangent line to $y = \tan(x)$ at $x = 0$

- 0
- 1
- $\sec^2(x)$
- Undefined
- We know how to compute this, but it's none of the above
- We don't know how to compute this yet

$$\frac{d}{dt}\left[\frac{1}{t}\right]$$

- $-\frac{1}{t^2}$
- $-t^0$
- $\ln(t)$
- Undefined
- We know how to compute this, but it's none of the above
- We don't know how to compute this yet

$$\frac{d}{dt}\left[\frac{1}{t^2+1}\right]$$

- $-2t^{-3}$
- $-\frac{1}{t^2+1}$
- $-\frac{1}{(t^2+1)^2}$
- $\ln(t^2+1)$
- Undefined
- We know how to compute this, but it's none of the above
- We don't know how to compute this yet

To

0

$$\frac{d}{dt}\left[\sqrt{t^2+1}\right]$$

- 1
- $\frac{1}{2}(t^2+1)^{-1/2}$
- $\frac{1}{2t}$
- We know how to compute this, but it's none of the above
- We don't know how to compute this yet

→ To the Jamboard for a quick demo and some practice

Have a great day 

Check calendar, Campuswire, email to stay up to speed!

Checkpoint 2 @ 4:00pm Thursday