# Lecture 16

Thursday, October 27, 2022 8:36 AM

* Questions ....

How to compute derivative?

- Definition: $f'(x) = \lim_{h \to 0} \frac{f(x+h) - f(x)}{h}$

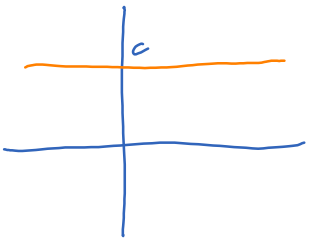
- Geometric representation:

  $f'(x)$ = slope of tangent line to graph of $f$ at $x$.

- Algebraic expression / differentiation laws:

  building complicated functions from basic blocks .. (like multiplying numbers, starting with the times table)

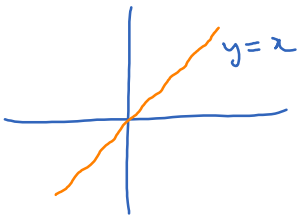
(1)




$f(x) = c$ for all $x$

$f'(x) = 0$ for all $x$

(2)




$f(x) = x$ for all $x$

$f'(x) = 1$ for all $x$

From these two blocks, we can find derivatives of many other functions.