Calculus 3.2 Key Points

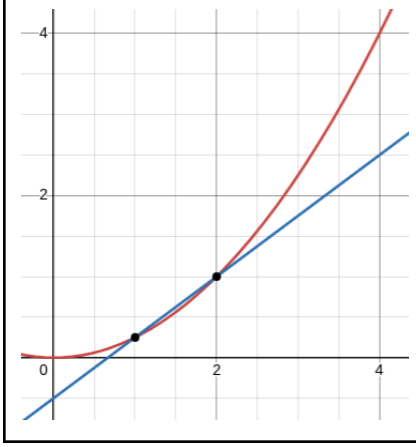
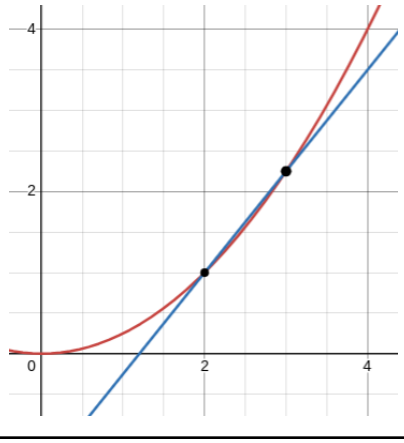
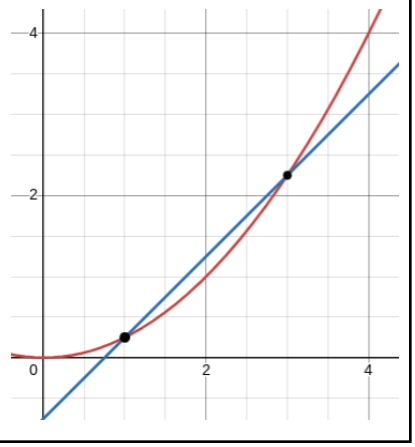
Formal Definition of the Derivative:

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

Alternate Form of the Derivative:
(aka Ana's method)

$$f'(x) = \lim_{x \to a} \frac{f(x)-f(a)}{x-a}$$

Methods of Slope Approximation:

Hana	Anah	Hanah
$\frac{f(a+h)-f(a)}{h}$	$\frac{f(a)-f(a-h)}{h}$	$\frac{f(a+h)-f(a-h)}{2h}$
Examples of each method for approximating the slope at $x = 2$		
		

Derivatives of Sine and Cosine:

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

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