

Things to memorize for final

Here are three things that will be on the final which were not on the three tests.

You will have to do a derivative by using

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

You will have to write down the **Theorem of the Mean**, which is
IF

- 1) $f(x)$ is continuous on the closed interval $[a, b]$
- 2) $f'(x)$ is continuous on the open interval (a, b)

THEN

There is a $c \in (a, b)$ for which

$$\frac{f(b) - f(a)}{b - a} = f'(c)$$

You will have to write down the **Fundamental Theorem of Calculus**, which is
IF

- 1) $f(x)$ is continuous on the closed interval $[a, b]$
- 2) $F'(x) = f(x)$

THEN

$$\int_a^b f(x) dx = F(b) - F(a)$$