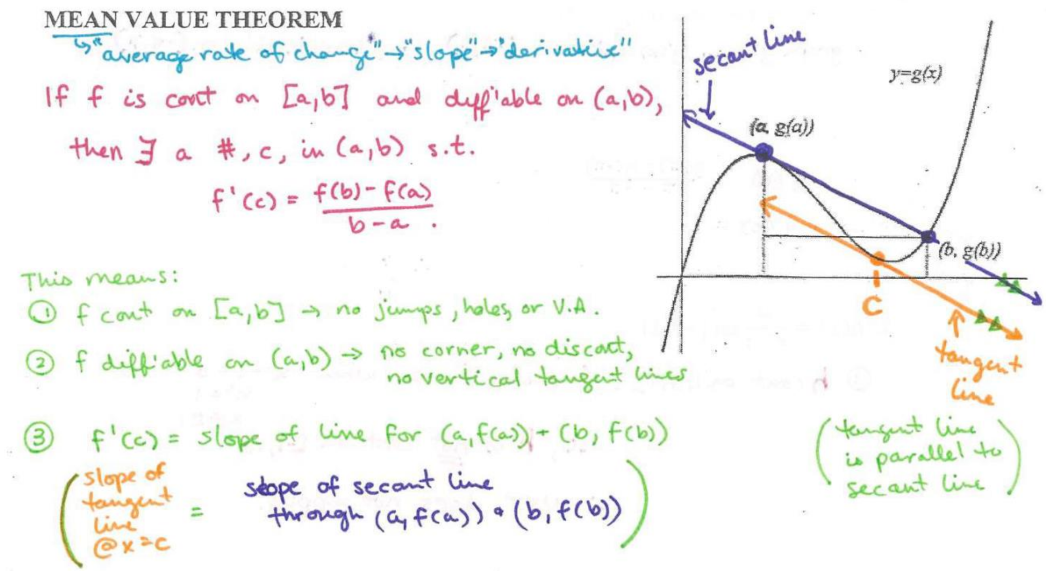
DATE:____________

## Mean Value Theorem for Integrals

Recall MVT…

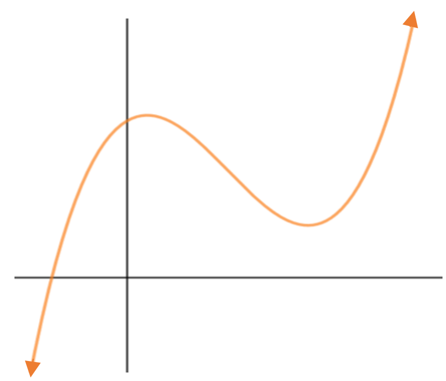



## MVT for Integrals

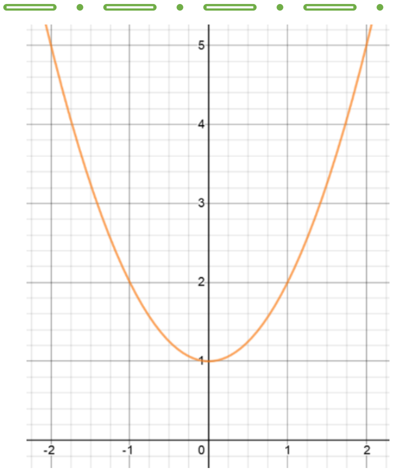
If $f$ is integrable on $[a, b]$,

then ∃ some $c$ on $[a, b]$ such that

$$\int_a^b f(x) =$$



*Example:*
$f(x) = 1 + x^2$ on $[-1,2]$. Find the value of $c$ that satisfies the Mean Value Theorem for Integrals.



# **Average Value of a Function**

Recall that: value means $y$-value

If $f$ is integrable on $[a, b]$,

then

Average Value of a Function $=$

*Example:*

Find the average value of $f(x) = \cos x$ on $\left[0, \frac{\pi}{2}\right]$.