

MA 2320: Quiz 3

Name: _____

1. Compute:

(a) $\frac{d}{dx} \left[\int_0^x f(t) dt \right]$

(b) $\frac{d}{dx} \left[\int_x^4 f(t) dt \right]$

(c) $\frac{d}{dx} \left[\int_0^{x^3} \sin(t^2) dt \right]$

(d) $\frac{d}{dx} \left[x^3 \int_0^{2x+1} f(t) dt \right]$

2. State the MVTI.

3. Find f_{ave} over the given interval and find the c from the MVTI.

(a) $f(x) = x^2 + 1$ over $[-3, 1]$.

(b) $f(x) = e^{3x+1}$ over $[0, 4]$.

4. Find the area between $f(x) = \sin(2x)$ and the x -axis between $x = 0$ and $x = \pi/2$.

5. Find the area between $f(x) = x^2 - 4$ and the x -axis.