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.