Instructions: *Include all relevant work to get full credit. Write your solutions using proper notations. Encircle your final answers.*

Quiz #18

1. State the **Fundamental Theorem of Calculus - Part I**.   [2]

2. Find the derivative of the following functions:

a. $F(x) = \int_0^x \dfrac{t^2}{1+t^3}\, dt$ [1.5]

b. $g(x) = \int_x^1 \sqrt{t + \sin t}\, dt$ [1.5]

c. $y = \int_0^{x^3} \cos(t^2)\, dt$ [2]

d. $g(x) = \int_{\sqrt{x}}^x \dfrac{e^t}{t}\, dt$ [3]