Name :

Student ID : **Department :**

Math 101, Calculus 1, Section 3
Quiz 3

1. Investigate the curve given by the equation $f(x) = \frac{\sin x}{2 + \cos x}$. Determine the intervals where the function f is increasing, decreasing, concave up, and concave down. Identify all local maximum and minimum points, as well as all inflection points of f. Estimate whether this function is symmetric and, if it is periodic, specify its periodicity.

a. Sketch the graph of $f(x)$ for $[0, 2\pi]$.

b. Sketch the graph of $f(x)$ for the $\Re$.

[**Exercise 40, on page 256 of your textbook**]

Please present the solution using mathematical terminology in a clear and understandable manner. (Grading 10 points.)