Math 4355   Name:

Quiz # 5

Please, type or write legibly, scan, save file as LASTNAME_FIRSTNAME_Q5.pdf and email to `dlabate@math.uh.edu` or `dlabate@uh.edu`. You need to email to me no later than 11:30AM on March 3.

Consider the function

$$f(x) = \begin{cases} 1 + \frac{2}{\pi}x & \text{if } -\frac{\pi}{2} \leq x < 0 \\ 1 - \frac{2}{\pi}x & \text{if } \quad 0 \leq x \leq \frac{\pi}{2} \\ 0 & \text{otherwise} \end{cases}$$

(1) Sketcth the function.

(2) Compute the Fourier series, valid in the interval $[-\pi, \pi]$, of $f(x)$.

IMPORTANT: Take advantage of even/odd properties to reduce calculations.