King Fahd University of Petroleum and Minerals
Department of Mathematics and Statistics
Math 301   Major Quiz 3

Name : .... ID #...................................... Serial #: ....

Question 1:[4 points] Use the Laplace transform to solve the initial value problem:

$$y' - 3y = \delta(t - 2), \quad y(0) = 2.$$

Question 2:[3 points] Find

$$\mathcal{L}\{t \sin t + \int_0^t \cos \tau \cos(t - \tau)d\tau\}.$$

Question 3:[3 points] Find the Fourier series expansion of

$$f(t) = u(t - \pi), \quad -2\pi < t < 2\pi.$$