KFUPM – CCSE - COMPUTER ENGINEERING DEPARTMENT

CSE 642 – Computer Systems Performance (Take home quiz 2)

Student Name:
Student Number:

1) (**10 points**) In applications where the Poisson process models customer interarrival times, it is customary to say that arrivals occur "*at random*". Show that if one arrival happens at the time instant x where x belongs to the interval [0, t], then the arrival time is *uniformly* distributed in the interval [0, x].

2) Draw several (up to 5) *realizations*, in one graph, of a Poisson process with rate λ equal to 1 arrival per second. Label your axes and use t from 0 to 10.

3) On the subject of a Gaussian random process:

a) Define the Gaussian random process.

b) Show that if the Gaussian random process is wide-sense stationary, then it is also stationary.