IME625: Stochastic Processes

2021-22 Sem-II

Homework-20

A store operates form 8-to-5. From 8 to 10 am, customers arrive at a Poisson rate of four an hour. Between 10 am and 12 pm, they arrive at a Poisson rate of eight an hour. From 12 to 2 pm, the arrival rate increases steadily from eight per hour at 12 to ten per hour at 2. From 2 to 5 pm, the arrival rate drops steadily from ten per hour at 2 to four per hour at 5. Find the mass function of the number of customers who enter the store on a given day. Find the density function of the arrival time of the n-th customer w.r.t. the 8-to-5 window.