SOAL LATIHAN MATERI ‘DISTRIBUSI EKSPONENSIAL PADA KEDATANGAN DAN PELAYANAN’

Nama :

NIM :

Prodi :

1. Suppose that the time between breakdowns for a machine is exponential with mean 6 hours. If the machine has worked without failure during the last 3 hours, what is the probability that it will continue without failure during the next hour? That it will break down during the next .5 hour?

Jawaban :

1. The time between arrivals at the game room in the student union is exponential with mean 10 minutes.
2. What is the arrival rate per hour?
3. What is the probability that no students will arrive at the game room during the next 15 minutes?
4. What is the probability that at least one student will visit the game room during the next 20 minutes?

Jawaban :

1. The manager of a new fast-food restaurant wants to quantify the arrival process of customers by estimating the fraction of interarrival time intervals that will be (a) less than 2 minutes, (b) between 2 and 3 minutes, and (c) more than 3 minutes. Arrivals in similar restaurants occur at the rate of 35 customers per hour. The interarrival time is exponentially distributed.

Jawaban :

1. Ann dan Jim membuat permainan dengan aturan Jim membayar Ann 2 sen apabila pelanggan berikutnya datang setelah 1.5 menit dan Ann akan membayar Jim senilai yang sama jika pelanggan berikutnya datang sebelum 1 menit. Jika waktu kedatangan antara 1 sampai 1.5 menit maka game dinyatakan draw. Tentukan nilai harapan pembayaran Jim dalam 8 jam!
2. Suppose that in Problem 4 the rules of the game are such that Jim pays Ann 2 cents if the next customer arrives after 1.5 minutes, and Ann pays Jim an equal amount if the next arrival is within 1 minute. For arrivals within the range 1 to 1.5 minutes, the game is a draw. Determine Jim's expected payoff in an 8-hour period.

Jawaban :