Lab 8 – Random Variables, Simulation

8.1 Queing Systems

Consider a queing system where requests arrive according to an exponential distribution (with mean time 8 minutes) and are processed with a single server according to a uniform distribution between 5 and 10 minutes).

a) If there is no queue (i.e. if a request arrives when the server is busy, the request is rejected) what percentage of requests is rejected?
b) Assume now a queue with up to k requests on the waiting. What is now the probability of a request being rejected?