

Math 5710
Poisson Distribution

1. The number of earthquakes of destructive magnitude in California follows a Poisson distribution with one such earthquake expected each year. What is the probability of at least 3 such earthquakes in a six-month period?

2. Suppose that there are a large number of users of a computer lab, but during a particular short time interval, the probability of a given user wanting access to the network server is very small. Let X be the number of users who do want access to the network server during this time interval. X might be modeled as a Poisson random variable, since it is the sum of many Bernoulli random variables, one for each potential user, and the success probability per user is small. Suppose also that approximately 25% of the time, the server is not busy with any jobs from user machines. Find the probability that at least 3 users want access during this time interval.