Example: Customers arrive at a travel agency at a mean rate of 3 per 20 minutes from 10:00 a.m. to 2:00 p.m. Assuming that the customers' arrivals follow a Poisson process, find the probability that no customers will arrive between 12:50 to 1:00 (so that you can sneak out for a quick lunch).

1) First determine the average per time interval asked. In this example, the time interval would be 10 minutes. Given the average per 20 minutes is 3, the average per 10 minutes would be 1.5.

2) Then from R Commander, click on IPSUR-Probability/Discrete Distributions/Poisson distributions/Poisson probability…

3) Enter the mean from part 1) into the dialog box.
4) Use the table provided in the display box of IPSUR to determine the probability of 0 customers within ten minutes.

The probability of $X = x$ is listed and the probability of $X = 0$ is around 0.2231.