

MA 222. Assignment 6

due Monday Jun. 21, 2010 at the beginning of the class.

For this assignment please solve the following problems: Plus answer the

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following questions related to the Poisson process. The next questions are about the following situation:

I am following cars passing on Washington street at the corner with the 6th street. Suppose that I estimate that cars pass by that location according to a Poisson process with an average of 10 cars per minute.

1. What is the distribution of the time between two consecutive cars? Give the name and provide its parameter(s).
2. What is the expected time between two consecutive cars?
3. What is the expected number of cars passing by that location in one hour?
4. Given that it has already been 30 seconds since I saw the last car passing by what is the probability that I have to wait 30 more seconds before I will see a car passing by.