Homework Assignment #2

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系級：資訊四

繳交日期：2016.04.18 (Mon.) 17:00

1. To show definition A implies B, we need to show three things (other conditions already exist):
2. The process has the property of stationary increments:

🡪The number of events that occur in any time interval only depends on the length of the time interval 🡪Stationary increments.

All of the three were proved, therefore, definition A implies B.

1. Let denotes the probability of an event being preserved, and hence is the probability of an event being erased. We want to show that :
2. Since the form of follows the mean-value function of the Poisson process , in this case. Therefore,
3. ; .
4. The long-run time at which machines are replaced is the sum of the expected lifetime within years and the expected lifetime after years, that is, the long-run time equals to the plus . The long-run rate is the reciprocal of the long-run time and is ; the long-run rate at which machines in use fail .