



MITx: 6.041x Introduction to Probability - The Science of Uncertainty



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Exercise: What kind of people are they

(1/1 point)

As in an earlier exercise, busy people arrive at the park according to a Poisson process with rate $\lambda_1 = 3$ /hour. Relaxed people arrive at the park according to an independent Poisson process with rate $\lambda_2 = 2$ /hour. Assume that no other people arrive at the park.

During the last 10 minutes, exactly two people arrived at the park. What is the probability that they are both relaxed?



Answer: 0.16


Answer:

As discussed in the preceding video, each arrival has probability $2/(3 + 2) = 2/5$ of being a relaxed person. Furthermore, the types (busy or relaxed) of the different arrivals are independent. Therefore, the probability that both arrivals are relaxed is $(2/5)^2 = 4/25$.


- ▶ Unit 6: Further topics on random variables
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- ▼ **Unit 9: Bernoulli and Poisson processes**

Unit overview

Lec. 21: The Bernoulli process


Exercises 21 due May 11, 2016 at 23:59 UTC 

Lec. 22: The Poisson process

Exercises 22 due May 11, 2016 at 23:59 UTC 

Lec. 23: More on the Poisson process


You have used 1 of 2 submissions

Exercises 23 due May 11, 2016
at 23:59 UTC 

Solved problems

**Additional theoretical
material**

Problem Set 9

Problem Set 9 due May 11,
2016 at 23:59 UTC 

Unit summary

► Unit 10: Markov
chains

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