



Course > Unit 9: ... > Lec. 23: ... > 8. Exer...

8. Exercise: What kind of people are they

Exercises due May 13, 2020 05:29 IST Completed

Exercise: What kind of people are they

0/1 point (graded)

As in an earlier exercise, busy people arrive at the park according to a Poisson process with rate $\lambda_1 = 3/\text{hour}$. Relaxed people arrive at the park according to an independent Poisson process with rate $\lambda_2 = 2/\text{hour}$. 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?

4/7

✗ Answer: 0.16

Solution:

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 $(2/5)^2 = 4/25$.

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You have used 3 of 3 attempts

i Answers are displayed within the problem

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alternative to conditional probability?

I brute-forced it by writing a simple script to compute any Poisson process as a function of lambda, tau, ...

2

numerical value or expression with e?

What are they looking for? Wondering whether to write a small program to compute it all.

1

✓ Alternative approach

5

conditional probability

I worked with conditional probability and works fine as well

1

Useful Hint

What is the probability that he is relaxed if only one person arrived at the park ? What about two then? P...

2

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