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9. Exercise: Poisson practice

Exercises due May 13, 2020 05:29 IST Completed

Exercise: Poisson practice

1/1 point (graded)

Consider a Poisson arrival process with rate λ per hour. To simplify notation, we let a=P(0,1), b=P(1,1), and c=P(2,1), where P(k,1) is the probability of exactly k arrivals over an hour-long time interval.

What is the probability that we will have "at most one arrival between 10:00 and 11:00 and exactly two arrivals between 10:00 and 12:00"? Your answer should be an algebraic function of a, b, and c in standard notation.

(a*c)+(b^2) **✓ Answer:** a*c+b^2

STANDARD NOTATION

Solution:

The event of interest can happen in two ways:

- (i) Zero arrivals during the first hour and two arrivals over the second hour; this has probability ac.
- (ii) One arrival during each one of the two hours; this has probability b^2 . Thus, the answer is $ac+b^2$. (Note that for both scenarios, we have used independence to find the associated probabilities.)

Submit You have used 1 of 3 attempts

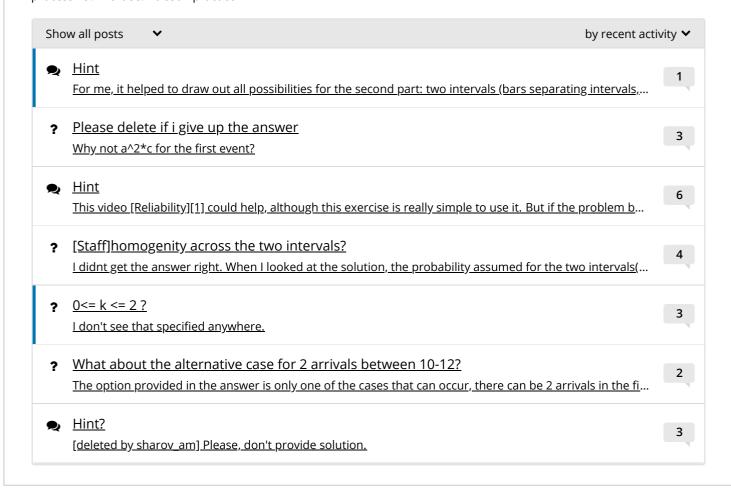
1 Answers are displayed within the problem



Discussion

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