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22. Exercise: Inference of the bias of a coin

Exercises due Mar 13, 2020 05:29 IST Past Due

Exercise: Inference of the bias of a coin

1 point possible (graded)

The random variable K is geometric with a parameter which is itself a uniform random variable Q on $[0, 1]$. Find the value $f_{Q|K}(0.5 | 1)$ of the conditional PDF of Q , given that $K = 1$. *Hint:* Use the result in the last segment.

Answer: 1

Solution:

We identify Q with the variable Y in the last segment. The information that $K = 1$ is the information that the first coin flip resulted in Heads, which is the same as the information that $K = 1$ in the last segment. Therefore, the conditional PDF of Q is $2q$, which for $q = 0.5$ evaluates to 1.

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You have used 0 of 3 attempts

i Answers are displayed within the problem

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Topic: Unit 5: Continuous random variables:Lec. 10: Conditioning on a random variable; Independence; Bayes' rule / 22. Exercise: Inference of the bias of a coin

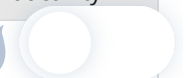
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? [Hint?](#)



I find the Hint rather misleading than helpful. What is exactly meant by "the last segment"?

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