Exercise: Inference of the bias of a coin

(1/1 point)

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

1

✔ **Answer:** 1

Answer:
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.

You have used 1 of 2 submissions

Lec. 10: Conditioning on a random variable; Independence; Bayes' rule
Exercises 10 due Mar 16, 2016 at 23:59 UT

Standard normal table

Solved problems

Problem Set 5
Problem Set 5 due Mar 16, 2016 at 23:59 UT

Unit summary