Assignment 7

Varun Gupta
cs21btech11060

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Outline

Problem

Ex 2.27

We have two coins; the first is fair and the second two-headed. We pick one of the coins at random, we toss it twice and heads shows both times. Find the probability that the coin picked is fair.

Solution

Solution:

Acoording to Bayes' theorem for two events A & B:

$$P(A|B) = \frac{P(B|A) \cdot P(A)}{P(B)} \tag{1}$$

Using Bayes' theorem:

P(coin picked is fair) $= \frac{\frac{1}{4}}{\frac{1}{4}+2\times\frac{1}{2}+1} = \frac{1}{9}$

Code

Code:

```
x = 1
y = 1/2
p = y*y/(x*x+y*x+x*y+y*y)
print(p)
```