IMM - DTU

02405 Probability
2003-10-2
BFN/bfn

Solution for review exercise 15 (chapter 1) in Pitman

Define the events Bi that box i is chosen, and the event G that a gold coin is found. We have

$$P(G|B1) = 1, P(G|B2) = 0, P(G|B3) = \frac{1}{2}$$

We want to find $P(B1|G)$. The probability is found using Baye's rule (p.49)

$$P(B1|G) = \frac{P(G|B1)P(B1)}{P(G|B1)P(B1) + P(G|B2)P(B2) + P(G|B3)P(B3)} = \frac{2}{3}$$