IMM - DTU

02405 Probability
2006-9-19
BFN/bfn

Solution for exercise 1.1.7 in Pitman

A special case of a problem, which we will treat in full generality later.

Question a) count the possibilitites 4 out of 36, $\frac{1}{9}$

Question b) count the possibilitites 9 out of 36, $\frac{1}{4}$

Question c) From a) and b) $\frac{1}{4} - \frac{1}{9} = \frac{5}{36}$

Question d) b) in general $\frac{x^2}{36}$ c) in general $\frac{2x-1}{36}$

Question e) The sum is over all possible outcomes, and should thus be 1.
Inserting $x = 6$ we get $\frac{6^2}{36} = 1$ q.e.d.