Homework Problem (Will be marked)

Questions

Show that if two events A and B are independent, then A and B^c are independent and so are A^c and B^c.

Please hand your answer in your Workshop Tutor Post Box, in the School of Mathematics, by Monday 22nd October, 4 pm.

Birthday Problem

In a classroom of n students, what is the probability p_n that two (or more) students share the same birthday?

Birthday Problem Solution

In a classroom of n students, what is the probability p_n that two (or more) students share the same birthday?

HINTS It's easier to compute the probability that no two students share a birthday. Let's look at the students one at a time. The first student can have any birthday he/she likes. The second student can not share the first student's birthday: 364 choices. The third student cannot share either of the first two birthdays: 363 choices. ... Etc. ... The $n-th$ student cannot share any of the previous $n-1$ birthdays: $365-n+1$ choices.

R Homework: Birthday Problem R implementation

Instructions

Please develop a R script implementing the discussed solution of the Birthday Problem.
You can write a function that implements the solution for every $n \leq 365$) and a function call that prints out the solution corresponding to n=23.
Upload your script as a **SURNAMEstudentid.txt** in MINERVA (you will find an assignment).