

COMPUTER SCIENCE 20, SPRING 2012
DISCRETE MATHEMATICS FOR COMPUTER SCIENCE

Class #26 (Bayes Theorem)

Homework, due in hard copy Monday 4/16/2012 at 10:10am

Please write your TF's name on your homework, and list the names of any students with whom you collaborated.

1. Our CS 20 class has 42 students. Assume that the birthday of the students are independent uniform random variables and that nobody was born on Feb 29.
 - (a) What is the probability that a given pair of students in the class shares the same birthday? Give your answer as a decimal to 3 decimal places.
 - (b) What is the probability that there exists a pair of students in the class that has the same birthday? Give your answer as a decimal to 3 decimal places.
 - (c) A student is a "lonely student" if no other student shares his/her birthday. What is the expected number of lonely students in the class? Give your answer as a decimal to one decimal place.