CS 70 FALL 2006 — DISCUSSION #8

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1. Administrivia

(1) Course Information
- The 8^{th} homework is due Friday at 4pm in 283 Soda Hall.
- This section will focus on the quiz below. Your result will be counted towards class participation.

2. Counting

Exercise 1. In a five-card hand, how many ways are there to obtain a pair, three-of-a-kind, four-of-a-kind, full-house, straight, straight-flush?

Exercise 2. How many 5 digit/character license plates are possible if you use characters A-Z and numbers 0-9? How many license plates are possible if 3 of them are characters and 2 of them are numbers?

3. Quiz

Answer the following questions. You do not need to justify your answer unless the questions explicitly requests you to do so. Please write your answers on the next page, detach it and give to the GSI when asked to. Remember to write your name on your answer sheet.

(1) What is the minimum number of edges I must remove from H_{200} so that it does not have an Eulerian path?
(2) True of False? If the Eulerian cycle and Rudrata cycle of a graph G exist and are the same, then G is a simple cycle.
(3) How many 3-bit de Bruijn cycles are there?
(4) True of False? The de Bruijn graph method to write strings containing all possible k-substrings works only for alphabets of even size.
(5) How many ways are there of sitting n people around a table with n seats, where simple rotations of the people are not counted as different seatings?
(6) How many different couples of numbers can result from the throw of two dice where order does not matter? Explain your reasoning.

Date: October 18, 2006.

The authors gratefully acknowledge Chris Crutchfield and Amir Kamil for the use of their previous notes, which form part of the basis for this handout.

Do not write here.

4. Answer Sheet

Use this page and its opposite side to write your answers. Please write your name at the top of this page.