

Mini Quiz
CS 203: Discrete Structures
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INSTRUCTIONS: A student should consider the last two digits of his or her roll number. Divide it by 4. Take the remainder. Suppose the student gets i ($0 \leq i \leq 3$) as remainder. Then the student should answer $(i + 1)^{th}$ numbered question. For example, if the last two digits are 20, the student should answer question number 1. Answer it in a paper, take a clear picture and submit your answer in jpg or pdf format in moodle. An event named MiniQuiz is created in classroom. Submit it there. The name of the jpg or pdf file should be your roll number. You are given 5 minutes to answer and 5 minutes to upload.

1. Suppose 6 pairs of similar-looking boots are thrown in a pile. How many boots must you pick in order to be sure of getting a matched pair?
2. A bag contains beads of two colors : black and white. What is the smallest number of beads which must be drawn from the bag, without looking, so that among these beads there are ten of the same color? Justify.
3. The derivative of $\frac{1}{1-x}$ is a generating function whose sequence is :
 - (a) 1,2,3,4,...
 - (b) 0,1,0,1,...
 - (c) 1,2,4,8,...
 - (d) 1,2,4,6,...
4. Given 9 integers, show that two of them can be chosen whose difference is divisible by 8.