Massachusetts Institute of Technology
6.042J/18.062J: Mathematics for Computer Science
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Handout 38
November 3, 2000

Tutorial 9 Problems

Problem 1 In lecture we demonstrated how to "guess" the fifth card in a poker hand when a collaborator reveals the other four cards. Describe a method for guessing two hidden cards in a hand of nine cards, when your collaborator reveals the other seven cards.

Problem 2 In how many ways can $2n$ students be divided into n pairs?

Problem 3 A positive integer is called *square-free* if it is not divisible by the square of any positive integer greater than 1. For example $35 = 5 \cdot 7$ is square-free but $18 = 2 \cdot 3^2$ is not. 1 is square-free. Use inclusion-exclusion to find the number of square-free positive integers strictly less than 151.