

Math 3215 Homework 1, part 2

August 30, 2011

1. Determine the number of sequences of integers x_1, x_2, \dots, x_{10} such that $0 \leq x_1 < x_2 < x_3 < \dots < x_{10} \leq 100$.
2. In a certain pick-6 lottery you get to choose any of 6 numbers from a set of size 50. If 4 of your numbers happen to be among the winning set of size 6, you win a prize. What is the probability that you match at least 4 numbers and therefore win a prize?
3. Computer passwords for a certain computer system allow capital letters A through Z, small letters a through z, numbers 0 through 9, and any of the 11 symbols $/?.!@#\$*()$

Passwords MUST be 8 charcters long, must include at least one capital letter, at least one small letter, and at least one of the 11 symbols. Determine the number of possible passwords.