

Combinatorics Homework 2

HW 2, due Thursday, Sept 19:

a) This course is mainly about thinking skills. It may help to consciously think about which strategies have worked for you in HW's 1 and 2. Write down one thing you've learned, one sentence of general advice that you'd like to remember or pass on. For example, *Replace a problem that's too complex by a smaller version, for practice or maybe a recursive approach.*

b) Practice with the first 20 exercises in Ch 2 until confident, but you do not have to write them up for a grade. Then, solve these and write them up:

Ch. 2 - 21, 28, 30, 32, 36, 39, 41, 43, 47, 50, 54

Note (if using my Help pages from 2008): in the previous edition of the book, these had the same numbers, but were in Chapter 3. Misc remarks on these:

For 2.32, there is a simpler answer than the one in the book, because an 11-permutation is really a 12-permutation; $12!/(3!4!5!)$.

For 2.39, the book gives a very useful hint (in the back).

For 2.50, assume the sides of the rectangle are rows or columns of the chessboard (can anyone solve it without this assumption?).

Problem 2.54 is similar to one of the MIT problems mentioned in class.

c) Practice with the first 10 exercises in Ch 3. Solve and write up these:

Ch. 3 - 4, 9, 11, 12 (more from Ch 3 in HW3)