

MATH 636, Fall 2015

HOMEWORK 8

To be prepared for presentation on Tuesday, October 20.

Background reading: Combinatorics: A Guided Tour, Sections 3.3.

Only consult with your classmates or professor to discuss the problem set.

We will discuss solutions to these questions in class.

Feel free to use *Wolfram Alpha* or *Mathematica* to look at the coefficients of this generating function.

Recall that the Mathematica command to find the coefficients of the generating function from class is: `Series[1/(1-x)/(1-x^2)/(1-x^3),{x,0,98}]`

8-1. Exercise 3.3.7 [*Hint: Multiply out some generating functions.*]

8-2. Suppose you roll **three** six-sided dice. Calculate the probability that the dice sum to fourteen. Now suppose you roll **five** six-sided dice. Calculate the probability the dice sum to fourteen. Which probability is higher?

Use generating functions to solve this problem.