Reading: AC 8.1, 9.1

1

AC 8.8.5: Find the generating function for the number of ways to create a bunch of n balloons selected from white, gold, and blue balloons so that the bunch contains at least one white balloon, at least one gold balloon, and at most two blue balloons. How many ways are there to create a bunch of 10 balloons subject to these requirements?

2

AC 8.8.8: Find the generating function for the number of ways to distribute blank scratch paper to Alice, Bob, Carlos, and Dave so that Alice gets at least two sheets, Bob gets at most three sheets, the number of sheets Carlos receives is a multiple of three, and Dave gets at least one sheet but no more than six sheets of scratch paper. Without finding the power series expansion for this generating function (or using a computer algebra system!), determine the coefficients on x2 and x3 in this generating function.

3

AC 9.9.10: Find and solve a recurrence equation for the number gn of ternary strings of length n that do not contain 102 as a substring.