

Fall 2019, Math 579: Preliminary Problem Set 9
Due: Thursday, November 7th, 2019
Recurrence Relations and Generating Functions

Preliminary problems. These problems should be completed before discussion on Thursday.

(P1) Let $A(z) = \sum_{n=1}^{\infty} z^n = z + z^2 + z^3 + z^4 + \dots$. Note the first term!

(a) Write out the first 4 nonzero terms of $(A(z))^2 = (z + z^2 + z^3 + \dots)(z + z^2 + z^3 + \dots)$.

(b) Write out the first 4 nonzero terms in the composition $A(A(z))$. Show enough work to easily recall where each term comes from.