Spring 2020, Math 621: Preliminary Problem Set 3
Due: Thursday, February 13th, 2020
Rational Generating Functions

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

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

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

(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.