

553.633/433

Homework #3

Due Monday 9/17/18

Three problems:

1.17

2.4 (just write down the procedure; you do not need to generate any values on the computer)

A. Illustrate the problem of LCGs projecting into lower-dimensional subspaces by considering a generator with $a = 23$, $c = 0$, and modulus = 97. Do two plots of U_k vs. U_{k-1} , first showing only 30 points and then showing 96 points. What do these two plots illustrate about the dangers of flawed generators? Do they suggest a possible way of using generators in practice?

Note: Here is a reminder regarding class policy (per syllabus), "...in exercises requiring a student to write a computer program, each student must write his/her own program and must turn in unique results from the program." Further, you are required to submit a copy of your code (submit electronically and in class).