Math 4330, Homework 9, Due 4/7/2014

Read pp. 1–11.

1. Implement a linear congruential generator with $a = 18$, $c = 25$, $m = 73$, $x_0 = 4$, and generate the next 10 values in the sequence.

2. Find a linear congruential generator with $m = 97$ which has the five outputs: $x_1 = 93$, $x_2 = 87$, $x_3 = 29$, $x_4 = 18$, $x_5 = 41$.

3. Find a linear congruential generator which gives the sequence of outputs: $x_1 = 97$, $x_2 = 6$, $x_3 = 64$, $x_4 = 105$, $x_5 = 25$.

(20 points extra credit) Find a linear congruential generator which gives the sequence of outputs: 41739, 118924, 116270, 83145, 47851, 83512, 9475, 35463, 120473, 99944, 64339, 118448, 27432, 119431, 28074, 1639, 20363, 126504, 56467, 42380, 56822, 26719, 59597, 35230, 55830.

*Hint:* this cannot reasonably be done with exhaustive search. You’ll need to first develop some theory with pencil and paper to solve it).

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