

Written Assignment 2

due on Wednesday, March 30th, 2011

1. Solve the recurrence relation $a_n = 2a_{n-1} + a_{n-2} - 2a_{n-3}$, $n \geq 3$, given $a_0 = 1, a_1 = 3, a_2 = 6$.
 - (a) using the method of the generating functions,
 - (b) using the method of the characteristic polynomial.
2. Use the method of the generating functions to solve the recurrence relation $a_n = 5a_{n-1} - 6a_{n-2}$, $n \geq 2$, given $a_0 = 1, a_1 = 4$.
3. Use the method of the generating functions to solve the recurrence relation $a_n = 4a_{n-1} - 3a_{n-2}$, $n \geq 2$, given $a_0 = 2, a_1 = 5$.
4. Use the method of the characteristic polynomial to solve the recurrence relation $a_n = 5a_{n-1} - 6a_{n-2} + 3n$, $n \geq 2$, given $a_0 = 2, a_1 = 14$.