Homework 5

Due Date: Friday February 3, 2012.

Solve the following using the characteristic equation method.

Problem 1. (5 pts.) Solve
\[ a_n = 2a_{n-1} + 3a_{n-2} \] for all \( n \geq 2 \) where \( a_0 = 2 \) and \( a_1 = 2 \)

Problem 2. (5 pts) Solve
\[ b_n = -8b_{n-1} - 12b_{n-2} \] for all \( n \geq 2 \) where \( b_0 = -2 \) and \( b_1 = 6 \)

Problem 3. (5 pts.)
\[ c_n = 2c_{n-1} + 15c_{n-2} \] for all \( n \geq 2 \) where \( c_0 = 3 \) and \( c_1 = -1 \)

Problem 4. (5 pts.)
\[ d_n = 9d_{n-2} \] for all \( n \geq 2 \) where \( d_0 = 0 \) and \( d_1 = 2 \)

Problem 5. (5 pts.)
\[ e_n = -4e_{n-1} - 4e_{n-2} \] for all \( n \geq 2 \) where \( e_0 = 0 \) and \( e_1 = -1 \)