

MAD 3105 DM2 **Quiz 5v** 14 Feb 1996 Name: _____

Show **ALL** work for credit; be neat; and use only **ONE** side of each page of paper.

1. Suppose that you have a large supply of 2¢, 3¢, and 5¢ stamps. Write a recurrence relation and initial conditions for the number s_n of ways in which n ¢ worth of postage can be attached to an envelope if the order in which the stamps are attached matters. (Thus a 2¢ stamp followed by a 3¢ stamp is different from a 3¢ stamp followed by a 2¢ stamp.)

2. Given $s_n = -8s_{n-1} - 15s_{n-2}$. Write the general solution to this recurrence relation. Explicitly find the solution which also satisfies the initial conditions $s_0 = 2, s_1 = 2$.