Disco II - Quiz 10

Name:_____ Box #_____

1. Using Generating Functions

1. Find the generating function and indicate what coefficient is required.

   a the number of solutions to $n = n_1 + n_2 + n_3 + n_4, n_1$ and n_3 odd n_2, and n_4 even, non negative integers.

   b the number of solutions to $n = n_1 + n_2 + n_3 + n_4, n_i \leq 3i$, all n_i nonnegative.

2. An icosahedral die has the number 1 to 10 written on the faces with the following frequencies.

1	2	3	4	5	6	7	8	9	10
1	1	2	3	3	3	3	2	1	1

   a Write out the generating function for the number of ways one can get integer n in a single toss.

b Now the number of ways the die sum is n for two (independent) tosses.

c The same as 2 except there are k tosses.