

Disco II - Quiz 9

Name: _____

Box # _____

1. Generating Functions

1. Find the coefficient of x^{10} in $\frac{1+x}{1-2x}$.
2. What are the generating functions of the following sequences.
 1. $0, 0, 0, 0, 1, -1, 1, -1, 1, -1, \dots$
 2. $2, 5, 13, 35, \dots, 1, 2^n + 3^n, \dots$ (general term in the n' th slot)
 3. $0, 1, 3, 7, 15, \dots, 1 + 2 + 4 + \dots + 2^{n-1}, \dots$ (general term in the n' th slot)
3. Find the general term of sequence whose generating function is: $\frac{x}{(1-x)^2(1+2x)}$