

**MA 294 - Turn in #5**

(1) For the sequence  $\{a_n\}$  defined as follows:

$$a_0 = 0, a_1 = 1, a_{n+2} = 2a_{n+1} + 3a_n + 2^n$$

use a generating function to give an exact formula for  $a_n$  in terms of  $n$ .

**[20 points]**