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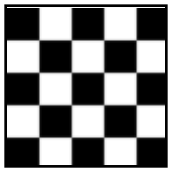
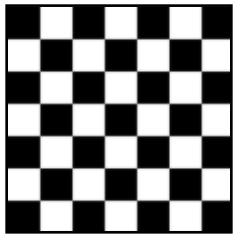
Counting + Recursion

Name: _____

Look at the following pattern out of a checkers board. In the following, we are counting the number of Black-squares in each set. Also, the 'Side=' denotes the number of black squares on a side.

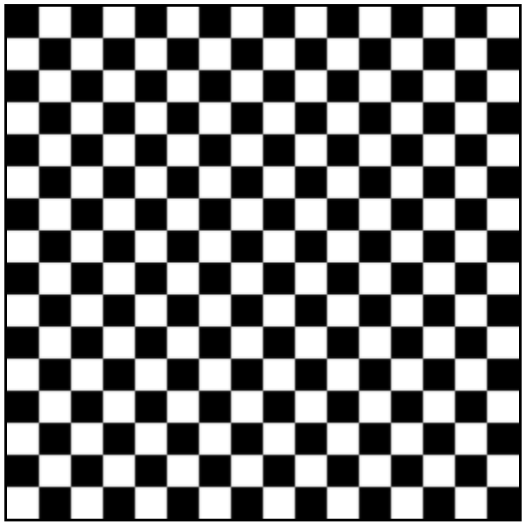
Side = 1.		Number of dark squares: 1
Side=2		Number of dark squares: 5
Side=3		Number of dark squares: 13
Side=4		Number of dark squares:
Side=5	(see big picture at the end…)	Number of dark squares:
Side=6		Number of dark squares:
Side=7		Number of dark squares:

1. Complete the last 3 rows of the table.

2. What will be the number of black squares when Side=12 ? Can you find it in terms of a recursion formula?

3. What will be the number of black squares when Side=50 ? Can you find it in terms of an explicit formula?

Just in case you need one….



=== =End====