### **SIENA COLLEGE**

**28th Annual** High School Programming Contest

##### **March 27, 2015**

###### Problem #1: Be There, And Be More than Square

Background Information: On a 2x2 checkerboard there are 9 unique rectangles, as shown below.

A1

A1

B1

B1

A1

B1

A2

B2

A1

B1

A2

B2

B1

B2

A1

A2

A2

B2

A2

B2

On a standard 8x8 checkerboard you can identify 1,296 unique rectangles. In fact, on an NxN checkerboard there are $\left(\frac{N(N+1)}{2}\right)^{2}$rectangles.

###### Programming Problem:

Input:  A positive integer N less than 200

Output: The number of rectangles on the NxN checkerboard

###### Example 1: Input:  6

######  Output:  441

###### Example 2: Input:  8

######  Output:  1296

###### Example 3:  Input:  10

###### Output:  3025