SUM OF SUB RECTANGLE AREAS

Time Limit 2 second

The following code snippet calculates the sum of the areas of all the sub rectangular grid in a rectangular grid from (0,0) to (N,N). Find an efficient way to compute that.

```
sum = 0
for r1 = 0 to N-1
for c1 = 0 to N-1
for r2 = r1+1 to N
for c2 = c1+1 to N
        sum = sum + (r2-r1)*(c2-c1)
print(sum)
```

Input
Input starts with T the number of test cases. Each test case consists of a single integer N $(1 < N < 10^{20})$.

Output
For each test output the sum (as computed above). Please note that even though W and H will fit into 64 bit integer, the sum may not be.

Sample Input Output

Sample Input	Sample Output
5	1
1	16
2	100
3	400
4	2794480588 9000000
1000	