



HOME TOP CATALOG CONTESTS GYM PROBLEMSET GROUPS RATING EDU API CALENDAR HELP

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PROBLEMS SUBMIT CODE MY SUBMISSIONS STATUS HACKS ROOM STANDINGS CUSTOM INVOCATION

A. Permutation Warm-Up

time limit per test: 1 second memory limit per test: 256 megabytes

For a permutation p of length n^* , we define the function:

$$f(p) = \sum_{i=1}^n \lvert p_i - i \rvert$$

You are given a number n. You need to compute how many **distinct** values the function f(p) can take when considering **all possible** permutations of the numbers from 1 to n.

*A permutation of length n is an array consisting of n distinct integers from 1 to n in arbitrary order. For example, [2,3,1,5,4] is a permutation, but [1,2,2] is not a permutation (2 appears twice in the array), and [1,3,4] is also not a permutation (n=3 but there is 4 in the array).

Input

Each test contains multiple test cases. The first line contains the number of test cases t ($1 \le t \le 100$). The description of the test cases follows.

The first line of each test case contains an integer n ($1 \le n \le 500$) — the number of numbers in the permutations.

Output

For each test case, output a single integer — the number of distinct values of the function f(p) for the given length of permutations.

Example

input	Сору
5	
2	
3	
8	
15	
43	
output	Сору
2	
3	
17	
57 463	
463	

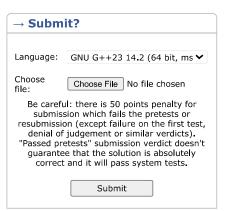
Note

Consider the first two examples of the input.

For n=2, there are only 2 permutations — [1,2] and [2,1]. f([1,2])=|1-1|+|2-2|=0, f([2,1])=|2-1|+|1-2|=1+1=2. Thus, the function takes 2 distinct values.

For n=3, there are already 6 permutations: [1,2,3], [1,3,2], [2,1,3], [2,3,1], [3,1,2], [3,2,1], the function values of which will be 0,2,2,4,4, and 4 respectively, meaning there are a total of 3 values.

Contest is running 01:52:50 Contestant



→ Last submissions		
Submission	Time	Verdict
317961345	May/01/2025 17:39	Pretests passed

→ Score table		
	Score	
<u>Problem A</u>	492	
<u>Problem B</u>	1230	
<u>Problem C</u>	1476	
<u>Problem D</u>	2214	
<u>Problem E</u>	2706	
<u>Problem F</u>	3198	
Successful hack	100	
Unsuccessful hack	-50	
Unsuccessful submission	-50	
Resubmission	-50	

^{*} If you solve problem on 00:04 from the first attempt

