

4771 The Number of Sequence Pair

Given two integer sequences $A = \{a[1], a[2], \dots, a[n]\}$ and $B = \{b[1], b[2], \dots, b[n]\}$, the sum-sequence of A and B is $\{a[1] + b[1], a[1] + b[2], \dots, a[2] + b[1], \dots, a[n] + b[n]\}$ which are generated by picking one element $a[i]$ in A and other element $b[j]$ in B and adding them to get a new element of the sum-sequence. If all the numbers in sum-sequence are different and can be found from 1 to $n * n$, then we call (A, B) n -th sequence pair.

Now given a number n , calculate the numbers of n -th sequence pair. Notice that pair (A, B) is equal to (B, A) . The smallest number in A must be 0 and the smallest number in B must be 1.

Input

The input file will contain multiple test cases. Each test case will contains an integer n ($2 \leq n \leq 1000$).

Output

For each input test case, print the numbers of n -th sequence pair.

Sample Input

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4
6
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Sample Output

```
3
7
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