3308 - Computer Transformation

Europe - Southeastern - 2005/2006

A sequence consisting of one digit, the number 1 is initially written into a computer. At each successive time step, the computer simultaneously tranforms each digit 0 into the sequence 1 0 and each digit 1 into the sequence 0 1. So, after the first time step, the sequence 0 1 is obtained; after the second, the sequence 1 0 0 1, after the third, the sequence 0 1 1 0 1 0 0 1 and so on.

How many pairs of consequitive zeroes will appear in the sequence after n steps?

Input

Every input line contains one natural number n ($0 < n \leq 1000$) .

Output

For each input n print the number of consequitive zeroes pairs that will appear in the sequence after n steps.

Sample Input

```
2
3
```

Sample Output

```
1
1
```

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