

You are given an elliptical shaped land and you are asked to choose n arbitrary points on its boundary. Then you connect all these points with one another with straight lines (that's $n * (n - 1) / 2$ connections for n points). What is the maximum number of pieces of land you will get by choosing the points on the boundary carefully?

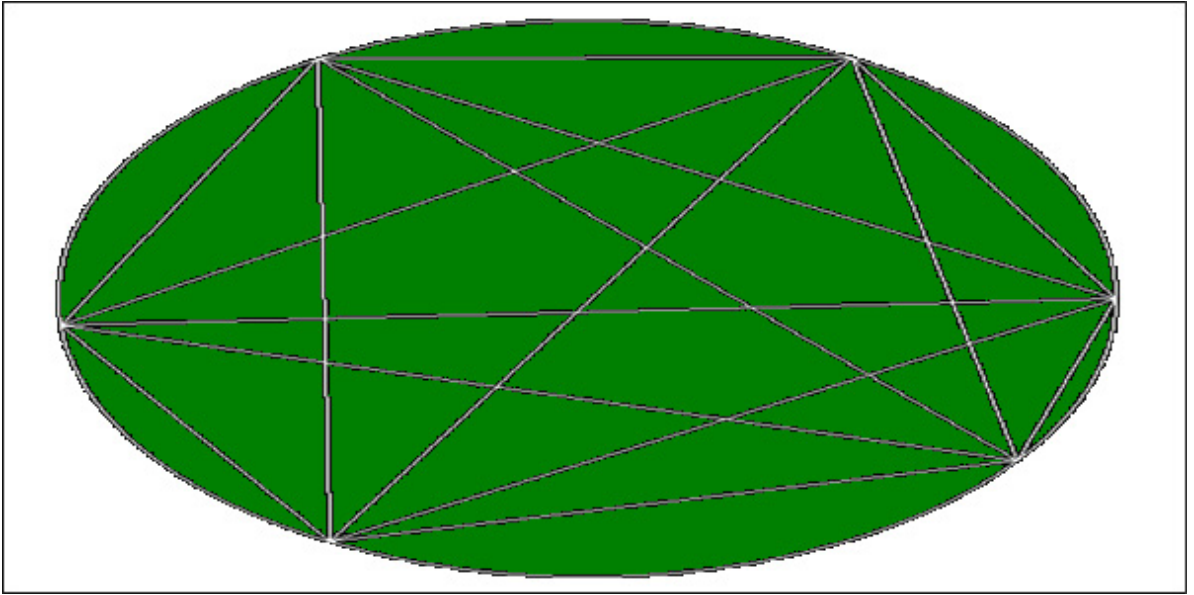


Fig: When the value of n is 6

Input

The first line of the input file contains one integer S ($0 < S < 3500$), which indicates how many sets of input are there. The next S lines contain S sets of input. Each input contains one integer N ($0 \leq N < 2^{31}$).

Output

For each set of input you should output in a single line the maximum number pieces of land possible to get for the value of N .

Sample Input

```
4
1
2
3
4
```

Sample Output

```
1
2
4
8
```