C. Meme Problem

time limit per test: 1 second
memory limit per test: 256 megabytes
input: standard input
output: standard output

Try guessing the statement from this picture:

You are given a non-negative integer d. You have to find two non-negative real numbers a and b such that $a + b = d$ and $a \cdot b = d$.

Input

The first line contains t ($1 \le t \le 10^3$) — the number of test cases.

Each test case contains one integer d ($0 \le d \le 10^3$).

Output

For each test print one line.

If there is an answer for the i-th test, print "Y", and then the numbers a and b.

If there is no answer for the i-th test, print "N".

Your answer will be considered correct if $|(a + b) - a \cdot b| \le 10^{-6}$ and $|(a + b) - d| \le 10^{-6}$.

Example

input Copy

```
7
69
0
1
4
5
999
1000
```

output Copy

```
Y 67.985071301 1.014928699
Y 0.000000000 0.000000000
N
Y 2.000000000 2.000000000
Y 3.618033989 1.381966011
Y 997.998996990 1.001003010
Y 998.998997995 1.001002005
```