primes triangle (II)

Primes triangle is a triangle that contain all prime numbers.

```
     2
   3  5
  7  11  13
 17  19  23  29
... ... ...
```

Your task is very easy given an integer from 1 to 10^9 prints its place in the primes triangle .

Input

in the first line integer 1<= T <= 10^4, followed by T lines each line contain integer 1 <= n <= 10^9 .

Output

one line contain pair of integers i, j .where i is the row number and j is the column number, 1 base. or -1 if n not exist in the primes triangle.

Example

Input:
```
3
3
23
4
```

Output:
```
2 1
4 3
-1
```

if you find Time limit is small here you can solve the tutorial version here:
http://www.spoj.com/problems/PTR22/