Moniter Goja, Gojar Monit

Input file:	`standard input`
Output file:	`standard output`
Time limit:	1 second
Memory limit:	256 megabytes

Given a natural number k such that $k > 1$, you have to find two natural numbers x and y such that it satisfies this equation:

$$x^y + y^x = k$$

Input

The first line of the input contains a single positive integer t ($1 \le t \le 10^5$) — the number of test cases. Then t test cases follow.

Each test case contains only one integer in a line k ($2 \le k \le 10^{18}$).

Output

For each test case, output two space-separated natural numbers in a line — the values of x and y that satisfy the equation.

Recall that a natural number is a positive integer.

If there are multiple correct combinations, you may output any of them.

It is guaranteed that at least one solution exists.

Example

standard input	standard output
2 17 6250	2 3 5 5

Note

Verification for sample outputs:

$2^3 + 3^2 = 8 + 9 = 17$.

$5^5 + 5^5 = 3125 + 3125 = 6250$.