A. k-Factorization

time limit per test
2 seconds
memory limit per test
256 megabytes
input
standard input
output
standard output

Given a positive integer n, find k integers (not necessary distinct) such that all these integers are strictly greater than 1, and their product is equal to n.

Input

The first line contains two integers n and k ($2 \le n \le 100000$, $1 \le k \le 20$).

Output

If it's impossible to find the representation of n as a product of k numbers, print `-1`.

Otherwise, print k integers in any order. Their product must be equal to n. If there are multiple answers, print any of them.

Examples

input

```
100000 2
```

output

```
2 50000
```

input

```
100000 20
```

output

```
-1
```

input

```
1024 5
```

output

```
2 64 2 2 2
```