M. Postcard

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

Andrey received a postcard from Irina. It contained only the words "Hello, Andrey!", and a strange string consisting of lowercase Latin letters, snowflakes and candy canes. Andrey thought that this string is an encrypted message, and decided to decrypt it.

Andrey noticed that snowflakes and candy canes always stand after the letters, so he supposed that the message was encrypted as follows. Candy cane means that the letter before it can be removed, or can be left. A snowflake means that the letter before it can be removed, left, or repeated several times.

For example, consider the following string:

This string can encode the message «`happynewyear`». For this, candy canes and snowflakes should be used as follows:

- candy cane 1: remove the letter `w`,
- snowflake 1: repeat the letter `p` twice,
- candy cane 2: leave the letter `n`,
- snowflake 2: remove the letter `w`,
- snowflake 3: leave the letter `e`.

Please note that the same string can encode different messages. For example, the string above can encode «`hayewyar`», «`happppppynewwwwwyear`», and other messages.

Andrey knows that messages from Irina usually have a length of k letters. Help him to find out if a given string can encode a message of k letters, and if so, give an example of such a message.

Input

The first line contains the string received in the postcard. The string consists only of lowercase Latin letters, as well as the characters «`*`» and «`?`», meaning snowflake and candy cone, respectively. These characters can only appear immediately after the letter. The length of the string does not exceed 200.

The second line contains an integer number k ($1 \le k \le 200$), the required message length.

Output

Print any message of length k that the given string can encode, or «`Impossible`» if such a message does not exist.

Examples

input	Copy
hw?ap*yn?eww*ye*ar 12	

output	Copy
happynewyear	

input	Copy
ab?a 2	

output	Copy
aa	

input	Copy
ab?a 3	

output	Copy
aba	

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Sheet #10 (General Hard)

Finished

Practice

→ About Time Scaling

This contest uses time limits scaling policy (depending on a programming language). The system automatically adjusts time limits by the following multipliers for some languages. Despite scaling (adjustment), the time limit cannot be more than 30 seconds. Read the details by the link.

→ Virtual participation

input Copy

```
ababb
5
```

output Copy

```
ababb
```

input Copy

```
ab?a
1
```

output Copy

```
Impossible
```

Virtual contest is a way to take part in past contest, as close as possible to participation on time. It is supported only ICPC mode for virtual contests. If you've seen these problems, a virtual contest is not for you - solve these problems in the archive. If you just want to solve some problem from a contest, a virtual contest is not for you - solve this problem in the archive. Never use someone else's code, read the tutorials or communicate with other person during a virtual contest.

Start virtual contest

→ Submit?

Language: GNU G++20 13.2 (64 bit, win

Choose file: Choose File No file chosen

Submit

→ Last submissions

Submission	Time	Verdict
211793502	Jul/02/2023 09:22	Accepted
211792579	Jul/02/2023 09:09	Accepted
211750423	Jul/01/2023 20:21	Accepted
211750144	Jul/01/2023 20:19	Time limit exceeded on test 76
211747829	Jul/01/2023 19:54	Wrong answer on test 60
211747075	Jul/01/2023 19:47	Wrong answer on test 15
211746863	Jul/01/2023 19:45	Wrong answer on test 15
211746666	Jul/01/2023 19:43	Wrong answer on test 12
211746544	Jul/01/2023 19:42	Wrong answer on test 1
211745540	Jul/01/2023 19:33	Wrong answer on test 8