

Reading Numbers

Input file: **standard input**
Output file: **standard output**
Time limit: 2 seconds
Memory limit: 1024 megabytes

Theodore is learning to read numbers. He finds a number and reads out the digits, grouping runs of a single digit together. He then does the same for the resulting number, and so on.

For example, if the starting number is 1, then the sequence begins

1, 11, 21, 1211, 111221, 312211, 13112221,

The fifth number is


three 1s two 2s one 1

so the sixth number is **three-one-two-two-one-one**, that is,

312211.

Given the starting number n , find the k th number that Theodore will read out.

Input

The only line of input contains two integers n ($1 \leq n \leq 1,000,000,000$) and k ($1 \leq k \leq 50$), representing the starting number and the index required.

Output

Output a single line, containing the k th number that Theodore reads out.

Note that this number could be very large.

Examples

standard input	standard output
1 7	13112221
9 3	1119
22 43	22

Note

In the third sample case, Theodore reads out 22 as two twos, so his second number is also 22. This continues forever.