Problem G. GCD of Strings

Time limit	4000 ms
Mem limit	1048576 kB
OS	Windows

Mohammad Nour and Marcel are close friends. One day Nour borrowed from Marcel some money.

After a few weeks, Nour decided to return the money to his friend, But unfortunately Marcel forgot how much it was. We all know that Nour is a funny person so he took advantage of this opportunity and decided to play with Marcel.

He gave him a huge number a, and asked him to split this number into **at least** k numbers (parts), such that each digit belongs to exactly one part and each part contains **no more than 9 consecutive digits**

The GCD of the numbers Marcel got after making the operation above is the amount of money Nour borrowed.

Marcel is a cunning, he wants the answer to be maximal possible, so help him to split the number a such that the GCD of its parts as big as possible.

The greatest common divisor, $GCD(a, b)$, of two positive integers a and b is the biggest integer that is a divisor of both a and b.

Please note that: $GCD(0, x) = x$

Input

The first line of the input contains two integers n and k $(1 \leq k \leq 10^3, 1 \leq n \leq 2 \times 10^3)$ the length of a and the minimum size of numbers Marcel should get.

The second line contains the number a without leading zeros

Output

Print -1 if Marcel can't split the number according to the conditions above. Otherwise print the maximum amount of money he can get.

Sample 1

Input	Output
8 2 63021002	2

Sample 2

Input	Output
9 3 303252015	15

Sample 3

Input	Output
3 4 150	-1

Note

In the first test case, one of the optimal solutions is dividing the string into 630210 and 02 such that GCD of them is 2.

In the second test case, you can split the string into 30, 32520 and 15.