Unique Substrings

*Extracted from:*W00032
Source file name: `unique.py`
Time limit: 1

Compose a program that reads in text from standard input and calculates the number of unique substrings of a given length k that it contains. For example, if the input is *CGCGGGCGCG* and $k = 3$, then there are five unique substrings of length 3 with the respective number of ocurrences:

Substring	GGC	GGG	CGG	CGC	GCG
Ocurrences	1	1	1	2	3

Input

The first line contains the text. The next like contains the value of k. The input file only contains two lines.

The input must be read from standard input.

Output

For each text calculates the number of **unique substrings** of a given length k that it contains, the substrings must be ordered lexicographically. **The sorting method must be implemented by you**.

The output must be written to standard output.

Sample Input	**Sample Output**

`CGCGGGCGCG`
`3`
	`The number of unique substrings of a given length 3 are:`
	`CGG`
	`GGC`
	`GGG`

Sample Input	**Sample Output**

`HELLOWORLD`
`2`
	`The number of unique substrings of a given length 2 are:`
	`EL`
	`HE`
	`LD`
	`LL`
	`LO`
	`OR`
	`OW`
	`RL`
	`WO`

Sample Input	**Sample Output**
CGCGGGCGCG 2	The number of unique substrings of a given length 2 are ZERO

This problem was based from the text: Introduction to Programming in Python. Robert Sedgewick, Kevin Wayne, and Robert Dondero. Chapter 4.4. Symbol Tables.