Ashton and String

locked

Ashton appeared for a job interview and is asked the following question. Arrange all the distinct substrings of a given string in lexicographical order and concatenate them. Print the k^{th} character of the concatenated string. It is assured that given value of k will be valid i.e. there will be a k^{th} character. Can you help Ashton out with this?

For example, given the string $s = \mathbf{abc}$, its distinct substrings are **[a, ab, abc, abcd, b, bc, bcd, c, cd, d]**. Sorted and concatenated, they make the string **aababcabcdbbcbcdccdd**. If $K = 5$ then, the answer is b, the 5^{th} character of the 1-indexed concatenated string.

Note We have distinct substrings here, i.e. if string is `aa`, it's distinct substrings are `a` and `aa`.

Function Description

Complete the *ashtonString* function in the editor below. It should return the k^{th} character from the concatenated string, 1-based indexing.

ashtonString has the following parameters:
- *s*: a string
- *k*: an integer

Input Format

The first line will contain an integer t, the number of test cases.

Each of the subsequent t pairs of lines is as follows:
- The first line of each test case contains a string, s.
- The second line contains an integer, k.

Constraints

$1 \leq t \leq 5$
$1 \leq |s| \leq 10^5$
Each character of string $s \in ascii[a - z]$
k will be an appropriate integer.

Output Format

Print the k^{th} character (1-based index) of the concatenation of the ordered distinct substrings of s.

Sample Input

```
1
dbac
3
```

Sample Output

```
c
```

Explanation

The substrings when arranged in lexicographic order are as follows

```
a, ac, b, ba, bac, c, d, db, dba, dbac
```

On concatenating them, we get

```
aacbbabaccddbdbadbac
```

The third character in this string is `c`.