

Similar Words

Consider a string of letters, for example, `abcd`, which we will call a 'word'. Given a base word and an integer N , a given word is considered 'similar with a distance N ' to the base word if,

1. Both words are of the same length
2. For each letter in the given word, if it is at index i , it is equal to one of the letters at indices i to $i + N$ of the base word

(Note that distance here DOES NOT refer to Levenshtein distance)

For example, given the base word "abcd", "bbcd" is similar to it at a distance 1, since the letter "b" at index 0 is equal to the letter "b" at index 0+1 of the base word and all the other letters are the same "cbcd" is not similar to it at a distance 1, since the letter "c" at index 0 is not there in either index 0 or 1 of the base word

Given a base word and an integer N , find the number of all possible words that are similar at a distance N to it.

Input Format

The first line of the input gives the number of test cases, T . For each test cases, the base word and N are given as space separated inputs in a single line.

Constraints

$$1 \leq T \leq 100$$
$$1 \leq N \leq 10$$

Output Format

For each test case, output one line showing the number of similar words at a distance N .

Sample Input 0

```
2
aaa 1
pqrs 1
```

Sample Output 0

```
1
8
```

Explanation 0

For case 1, there are no similar words other than the base word 'aaa'.

For case 2, there are 8 similar words: 'pqrs', 'pqss', 'prrs', 'prss', 'qqrs', 'qqss', 'qrrs', 'qrss'

