

# Number of quite different words

Let's consider the alphabet consisting of the first  $c$  roman uppercase letters, i.e. {A, B, C, D, E, F} if  $c$  is 6.

We will call two words *quite different*, if there is no common subsequence of length more than one between those two words. For example ABC and CBA are quite different, but ABBA and CADDCAD aren't, because AA is a subsequence of both words.

Given a word  $w$  you are to find the number of words of length  $n$  that are quite different from  $w$ .

## Input

The first line will contain the number of test cases (at most 20). Then there will be pairs of lines, the first one containing the numbers  $n$  ( $n$  will fit into a 32-bit signed integer and will be non-negative) and  $c$  ( $1 \leq c \leq 6$ ), the second one the word  $w$ .  $w$  will only consist of the first  $c$  letters of the roman alphabet and will have at most 10000 characters.

## Output

Print one line for each test case, consisting only of the number of words that are quite different from  $w$ . As this number can be quite large, you just have to output its remainder when dividing by 4242.

## Example

### Input:

```
3
3 3
ABC
4 4
CADDCAD
100 3
A
```

### Output:

```
10
13
2223
```