

The String Problem

Mina and Tina love to play with strings. Mina's favorite string name is **A** and Tina's favorite string name is **B**. One day Tina stole Mina's string. Now she is wondering the maximum number of string **B** She can make using characters from string **A**. After trying for a long period of time she failed to figure out the number. Now she is asking for your help to find the number.

Input

Input starts with **T**($1 \leq T \leq 100$), denoting the number of test case.

Each of the test case contains 3 line. First line contains **n** & **m** ($1 \leq n, m \leq 100000$). **n** & **m** are the size of string **A** & **B** respectively. Second line contains string **A** and third line contains **B**.

Input contains only lower case English letter.

Output

For each testcase, find the maximum number of string **B** can be created using characters from string **A**.

Example

Input:

```
2
4 2
abcd
ca
4 1
abcd
e
```

Output:

```
1
0
```