(Adv.) Competitive Programming

Submit until end of contest, via the judge interface

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Problem: gummi-bears-2 (1 second timelimit)

For a funny party game you bought several bags of gummi bears. To prepare that game you place the gummi bears of two bags in two long lines. Now you guests get the following task: Reorder the gummi bears to get identical lines of gummi bears. During the reordering, they are allowed to eat some gummi bears but not more than k and only from the second line.

But now one of your guests claims that the games is not playable with the current lines. He thinks it's not possible to reorder them to get identical lines. You start to reorder them but after a long time you were not able to proof the opposite. Maybe your computer can help you.

Input The input starts with the number n ($n \leq 7000$), the number of test cases. Afterwards n lines follow. Each line contains one testcase. It starts with a single number k ($k \leq 10$). Afterwards two lines of gummi bears follow. Each line consists of up to 2000 gummi bears identified by their types. Each gummi bear type is identified by a lowercase letter (there are not more than 26 types). The lines are not ordered in any way.

Output Please print for each test case in a separate line, if the game is playable with these lines of gummi bears. If the game is playable, print a `1`. Otherwise, a `0`.

Sample input

```
4
0 abc cba
1 abc bcad
2 abc bcaddd
2 abc def
```

Sample output

```
1
1
0
0
```

```
5
6 rofeg rgoef
9 w wlznnt
1 u upy
5 cuffjl vhkqhm
1 loodmwjr ltojrmod
```

```
1
1
0
0
0
```