

Problem 2: Bird is the Word

A word search puzzle is a puzzle in which one must find a set of words in a grid of letters. These words can be found in all directions (horizontal, vertical, and diagonal) and can be forward (left to right), backwards (right-to-left), downwards (upper to lower), or upwards (lower to upper). Note that in such a puzzle, a letter can be part of more than one word. Write a program which, given a list of n words and a description of an $r \times c$ grid of letters, determines and outputs the number of words in the list that appear (as specified above) in the grid.

Your input will be a textfile in which the first line gives the total number of word search puzzles in the file to analyze. The first line of each subsequent word search puzzle in the textfile gives the values of n , r , and c , respectively; the second line gives the n words to find in the grid, and each of the remaining r lines is a row in the grid consisting of a string of c letters with no embedded whitespace. Each of the remaining word search puzzles' input is structured similarly. You may assume that all input files are formatted correctly.

Sample input (available as file "test2.dat"):

```
3
7 3 4
acc bka kcb haf acd hak eee
fakb
aacc
habd
10 10 10
lif ewfaae ltade vhdaks ihvjlljfgte ffs otvc ekxibdhpyk mapghu gzxrshoqn
eueqzpigbh
pucrmlufwm
nqohsrxzgf
nbehskadhv
fdmaoealjs
fihaaudaks
uzezpfxatw
khejagwntd
jmicksheil
ramkuvwuor
5 3 4
aaa bbb ccc ddd eee
ijkz
lmny
opqq
```

Sample output:

The puzzle contains 6 words

The puzzle contains 5 words

The puzzle contains 0 words