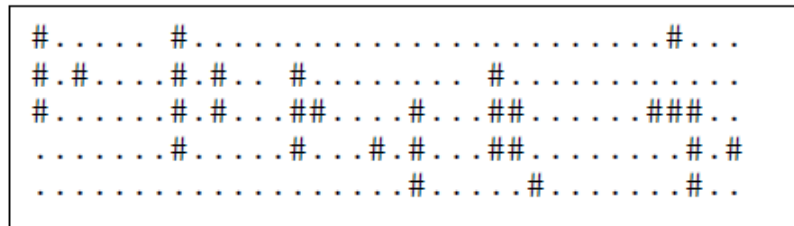
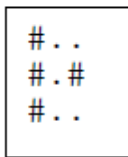


## D: Desert Bit Map

**Time Limit: 1 second(s)**

This problem requires you to search a black and white satellite image of a desert for a secret building complex with a given shape. A complex of this given shape may host an installation for producing the strategic xenium macgillicudamate ingredient, and must keep its orientation with regard to cardinal axes (North-East-South-West). Rotations and mirror images are not allowed because they would interfere with the delicate alchemy required for the production process. You must determine how many times the given complex may possibly occur in the image.

Consider the following images, both on the same scale, where a # (sharp) is a “black” pixel representing a part of a building, and a . (dot) is a “white” pixel, representing sand. On the left is an image of the complex you are trying to locate, on the right is an image of the desert with some buildings on it.



- How many possible locations for the given secret buildings do we count?
- The answer is *four*: one at the top-left corner, two overlapped possibilities to its right, and one in the bottom right. The shapes near the top-right corner, and in the centre bottom don't count because they are rotated (remember that rotated and/or mirrored images do not count).
- Note that, as this answer implies, the sand pixels in the image of the building complex simply establish the necessary relationships between the building parts. In the actual image they may contain *either* sand *or* other building parts (possibly for disguising the true nature of the complex).
- *Assume* that images representing strategic complexes are already trimmed of any unneeded dot “white” pixels on the edges, i.e., these images will always contain *at least one # character on each edge* (as our example shows). An edge here is the first or last row or column.

### Input

Each test case will give you the specification for the building complex image followed by the specification for the desert image.

In each problem the input is:

- Line 1: 2 positive integers,  $b_1$ ,  $b_2$ , respectively representing the number of lines and the number of columns in the following buildings image. Both numbers will be in the range 1 to 16 inclusive.
- Next  $b_1$  lines:  $b_2$  characters (# or .) on each line to represent part of the image of the building complex.
- Next Line: 2 positive integers,  $d_1$ ,  $d_2$ , respectively representing the number of lines and the number of columns in the following Desert image. Both numbers will be in the range 1 to 64 inclusive.
- Next  $d_1$  lines:  $d_2$  characters (# or .) on each line to represent the desert image.

### Output

The output for each test case consists of a single integer value on a line by itself being the number of matches found.

## Sample Input and Output

Sample Input 1	Output for Sample Input
2 2 #. ## 3 5 #.#.# ##### .###.	4

Sample Input 2	Output for Sample Input
1 3 #.# 3 6 ##..## .#.## #.#...	3

Sample Input 3	Output for Sample Input
3 3 #.. #.# #.. 5 36 #.....#.....#... #.#.....#.#.....#..... #.....#.#.....##.....#.....##.....###.. .....#.....#.....#.#.....##.....#.# .....#.....#.....#.....#...	4