

Problem J. Cell Tower

Input file: *standard input*
Output file: *standard output*
Time limit: 2 seconds
Memory limit: 1024 mebibytes

Cell Tower is an interesting daily puzzle game, <https://www.andrewt.net/puzzles/cell-tower/>.

Here we consider a simplified version. You are given 8×8 square with one character in each cell and a dictionary. Please divide the square into several parts, so that each part is a **connected block** and the characters in this connected block (from top to bottom and from left to right) make up a valid word (i.e., appear in the dictionary).

Two cells A, B are called **connected pair**, if A and B directly share the same side, or there exists another cell C so that both A, C and B, C are connected pairs.

A group of cells is called **connected block** if any pair of cells in this group are **connected pairs** and the size of this group is either 3 or 4.

Input

The first 8 lines of input each contains 8 integers $S_{q_{i,j}}$ ($0 \leq S_{q_{i,j}} \leq 9$) indicating the given 8×8 square.

In the next line, there is one integer n ($1 \leq n \leq 11000$) indicating the size of the dictionary.

In the next n lines, there is a string S_i ($3 \leq |S_i| \leq 4$) in each line, describing the word in the dictionary. The character set of S_i is $\{0, 1, 2, 3, 4, 5, 6, 7, 8, 9\}$.

Output

Please output the number of valid divisions.

Example

standard input	standard output
1 1 1 1 2 3 3 3 0 4 4 4 2 2 2 3 0 0 5 5 6 6 7 7 0 9 5 5 6 8 7 7 9 9 9 1 6 8 8 8 3 1 1 1 2 2 2 2 4 5 6 0 0 4 4 3 7 8 9 0 0 4 3 3 16 1111 2222 3333 444 0000 5555 6666 7777 8888 9999 111 333 3456 789 3478 569	2