

Problem B

We all love find-a-word puzzles. This time, you will be looking for numbers which are squares in a square grid of digits. Numbers can be read horizontally, vertically and diagonally, in eight different directions. Find all numbers that are squares and output how many **distinct** squares there are.

Input

The input should be read from the standard input.

The first line of input contains the number of test cases (not more than 10). The test cases follow.

Each test case starts with an empty line and then five lines of five digits follow.

Output

For each test case output a single line with the number of distinct squares in the grid.

Sample input

```
1
00000
00010
00600
00000
00007
```

Sample output

```
5
```

There are 5 squares in the grid: 0, 1, 100, 16 and 1600.
Time limit: 1 second