Mountain peaks

A height-map shows the altitude of different portions of land in a region. The region is organized in cells. Each cell corresponds to a 100m $\times$ 100m square region.

A file "*map.txt*" contains the altitude information of the region, represented as a matrix. Each element of the matrix corresponds to a region cell. The height values are integer values greater than or equal to 0. Each row of the file corresponds to a row of the matrix, and the elements of each row are separated by white spaces, as in the following example:

```
3 4 4 4 3 2 1 0 0 0
3 4 5 4 3 2 1 1 1 1
3 4 4 4 3 2 2 2 2 1
3 3 3 3 3 3 3 3 2 1
2 2 2 2 2 3 4 3 2 1
1 1 1 1 2 3 3 3 2 1
0 0 0 1 2 2 2 2 2 1
0 0 0 1 1 1 1 1 1 1
0 1 0 0 0 0 0 0 0 0
0 0 0 0 0 0 1 0 0 0
```

A value 0 denotes the sea level, while larger values correspond to the altitude of that portion of land.

Write a Python program to identify *peaks*, i.e. cells which are higher than all the surrounding cells (consider also neighbors on the diagonal, for up to 8 neighboring cells). Cells at the sea levels should not be considered peaks in any case. For each peak, the program must print its height and the corresponding position in the matrix (rows should be numbered according to their order in the file, i.e. the first row in the file will have index 0; the same for columns). The program must also print the average peak height. Should no peak exist, the program must print that there are no peaks.

Example

Assuming the map file given above, the program should print

```
5 1 2
4 4 6
1 8 1
1 9 6

Average height: 2.75 m
```