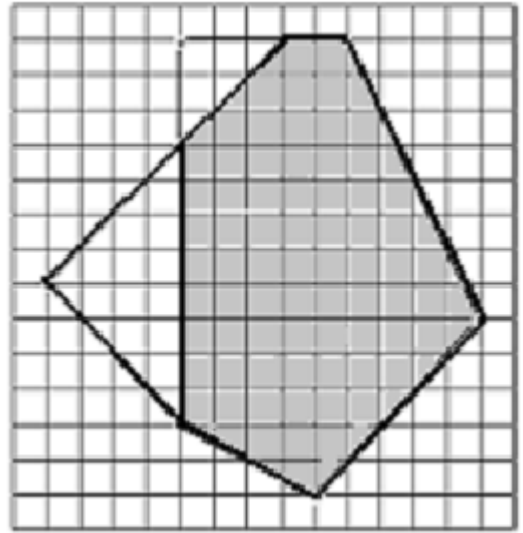
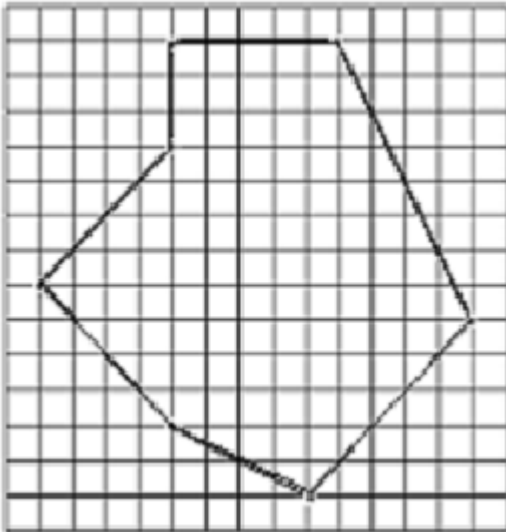


The art galleries of the new and very futuristic building of the Center for Balkan Cooperation have the form of polygons (not necessarily convex). When a big exhibition is organized, watching over all of the pictures is a big security concern. Your task is that for a given gallery to write a program which finds the surface of the area of the floor, from which each point on the walls of the gallery is visible. On the first figure a map of a gallery is given in some co-ordinate system. The area wanted is shaded on the second figure.



### Input

The number of tasks  $T$  that your program have to solve will be on the first row of the input file. Input data for each task start with an integer  $N$ ,  $5 \leq N \leq 1500$ . Each of the next  $N$  rows of the input will contain the co-ordinates of a vertex of the polygon — two integers that fit in 16-bit integer type, separated by a single space. Following the row with the co-ordinates of the last vertex for the task comes the line with the number of vertices for the next test and so on.

### Output

For each test you must write on one line the required surface — a number with exactly two digits after the decimal point (the number should be rounded to the second digit after the decimal point).

### Sample Input

```
1
7
0 0
4 4
4 7
9 7
13 -1
8 -6
4 -4
```

### Sample Output

```
80.00
```