

Problem G

Polygon Area


Problem ID: polygonarea

CPU Time limit: 1 second

Memory limit: 1024 MB

Author: Per Austrin

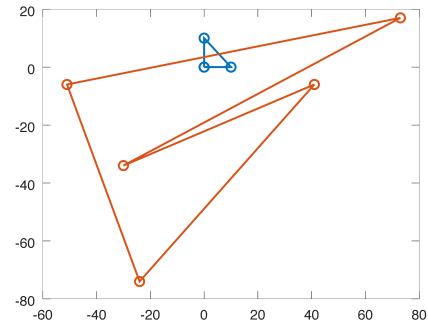
Source: KTH CSC Popup 2005

License: 

Compute the area of a simple polygon, and the direction (clockwise or counterclockwise) in which its vertices are given.

Input

Input contains up to 25 test cases. Each test case begins with an integer n ($3 \leq n \leq 1\,000$). Then follow the n vertices of a simple polygon, one per line, each of the form $x\ y$. The points may be given in either clockwise or counterclockwise order. Coordinates are integers with absolute value bounded by 10 000. The input is terminated by a case beginning with 0.



Sample test cases.

Output

For each test case, output a line $D\ A$, where D is one of “cw” or “ccw”, indicating whether the polygon was given in clockwise or counterclockwise order, respectively. A is the area of the polygon, given with exactly one digit after the decimal point.

Sample Input 1

```
3
0 0
10 0
0 10
5
41 -6
-24 -74
-51 -6
73 17
-30 -34
0
```

Sample Output 1

```
CCW 50.0
CW 3817.5
```