

Area of a Polygon

Task: You are given the n vertices p_0, \dots, p_{n-1} of a non-self-intersecting polygon P . Compute the area A of P .

Input: The first line of the input contains the number n of vertices. Then, n lines follow describing the vertices, each line containing the x and y coordinate of one vertex. You can assume that all coordinates are integers, and that we have $-1000 \leq x, y \leq 1000$.

Output: Output the area A of the described polygon.

Sample Input:

```
5
-1 0
0 1
2 0
1 -1
0 -2
```

Sample Output:

```
4.5
```