

Compute the Perimeter of a Polygon ★

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Problem

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You are given the cartesian coordinates of a set of points in a **2D** plane. When traversed sequentially, these points form a Polygon, P , which is not self-intersecting in nature. Can you compute the perimeter of polygon P ?

Input Format

The first line contains an integer, N , denoting the number of points.

The N subsequent lines each contain **2** space-separated integers denoting the respective x and y coordinates of a point.

Constraints

- No **2** points are coincident, and polygon P is obtained by traversing the points in a clockwise direction.
- $3 \leq N \leq 1000$
- $0 \leq x, y \leq 1000$

Output Format

For each test case, print the perimeter of P (correct to a scale of one decimal place).

Note: Do not add any leading/trailing spaces or units.

Sample Input

```
4
0 0
0 1
1 1
1 0
```

Sample Output

```
4
```

Explanation

The given polygon is a square, and each of its sides are **1** unit in length. $perimeter(P) = 1 + 1 + 1 + 1 = 4$, so we print **4** on a new line.

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Language

Haskell



```
1 import Data.List
2 import Control.Monad
3
4 main = do
5     pc <- (read::String->Double) `fmap` getLine
6     ps <- forM [1..pc] $ const $ do
7         a:b:_ <- (fmap (read::String->Double) . words) `fmap` getLine
```



```
8         return (a,b)
9         print $ snd $ foldl f (last ps, 0) ps
10     where f ((x0,y0), s) (x1,y1) = ((x1,y1), s + (sqrt $ (x1-x0)^2 + (y1-y0)^2))
11
12
```

Line: 12 Col: 1

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