Category: Easy

Contest: Not yet asked in any contest

Question:

As soon as our respected PM Modiji said that swachhta is important, the state governments started thinking of building sewage lines for every village and started connected it to lines of disposal points. The task is to spend as less money as possible on this project and yet connect all villages with sewer lines. So they asked coders to help them. Given names and coordinates of villages, find the minimum cost of creating sewer lines connecting all these villages with each other and finally to a disposal point (Name: DISP for disposal). Cost of digging a sewer is Rs. 10 per meter (m). (All coordinates are in meter)

**Input:**

Number of villages: [0,100]

Names: Strings

Coordinates: REAL numbers in [-10^8, 10^8] in m with **accuracy of 4 decimal places**

Input format: Name(single word without spaces) x-coordinate y-coordinate

Line 1: Number of villages

Rest in the above format

**Output:**

Cost nearest to a rupee.

**Example:**

5

DISP 0 0

Kalyan 2 2

Thane -2 -2

Dahisar 2 1

Khandala 3 3

Output:

75

Explanation:

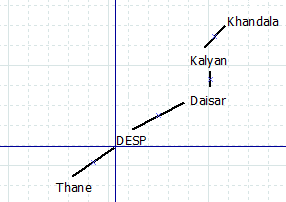
Sewer line is:

thane to disp

disp to dahisar

dahisar to kalyan

kalyan to khandala



Try these inputs:

|  |  |
| --- | --- |
| input | output |
| 5  DISP 0 0  2 0.1 0.1  3 0.1 -0.1  4 -0.1 0.1  5 -0.1 -0.1 | 6 |
| 10  DISP 0 0  2 0.1 0.2  3 0.2 0.4  4 0.3 0.6  5 0.4 0.8  6 0.5 1  7 0.6 1.2  8 0.7 1.4  9 0.8 1.6  10 1 2 | 22 |
| 15  DISP 1 0  1 0.4067 0.9135  2 0.7431 0.6691  3 0.9511 0.309  4 0.9945 -0.1045  5 0.866 -0.5  6 0.5878 -0.809  7 0.2079 -0.9781  8 -0.2079 -0.9781  9 -0.5878 -0.809  10 -0.866 -0.5  11 -0.9945 -0.1045  12 -0.9511 0.309  13 -0.7431 0.6691  14 -0.4067 0.9135 | 54 |
| 15  DISP 0 0  1 0.4067 0.9135  2 0.7431 0.6691  3 0.9511 0.309  4 0.9945 -0.1045  5 0.866 -0.5  6 0.5878 -0.809  7 0.2079 -0.9781  8 -0.2079 -0.9781  9 -0.5878 -0.809  10 -0.866 -0.5  11 -0.9945 -0.1045  12 -0.9511 0.309  13 -0.7431 0.6691  14 -0.4067 0.9135 | 64 |
| 15  DISP 0 0  1 406736.6431 913545.4576  2 743144.8255 669130.6064  3 951056.5163 309016.9944  4 994521.8954 -104528.4633  5 866025.4038 -500000.0  6 587785.2523 -809016.9944  7 207911.6908 -978147.6007  8 -207911.6908 -978147.6007  9 -587785.2523 -809016.9944  10 -866025.4038 -500000.0  11 -994521.8954 -104528.4633  12 -951056.5163 309016.9944  13 -743144.8255 669130.6064  14 -406736.6431 913545.4576 | 64057040 |
| 5  DISP 0 0  1 0 1  2 0 -1  3 100000000 0  4 0 100000000 | 2000000010 |
| 5  DISP 0 0  1 0 1  2 0 -1  3 100000000 0  4 -100000000 0 | 2000000020 |