

Kickstart Round B 2017

[A. Math Encoder](#)**B. Center**[C. Christmas Tree](#)[Questions asked](#)

## Submissions

## Math Encoder

|      |  |
|------|--|
| 7pt  | Not attempted<br><b>820/920 users</b><br>correct (89%) |
| 16pt | Not attempted<br><b>411/802 users</b><br>correct (51%) |

## Center

|      |  |
|------|--|
| 13pt | Not attempted<br><b>190/437 users</b><br>correct (43%) |
| 21pt | Not attempted<br><b>97/175 users</b><br>correct (55%)  |

## Christmas Tree

|      |  |
|------|--|
| 11pt | Not attempted<br><b>442/522 users</b><br>correct (85%) |
| 32pt | Not attempted<br><b>59/199 users</b><br>correct (30%)  |

## Top Scores

|              |     |
|--------------|-----|
| azure97      | 100 |
| pps789       | 100 |
| saffahyjp    | 100 |
| wifi         | 100 |
| Uhateme      | 100 |
| BangBangBang | 100 |
| Tian.Xie     | 100 |
| pwypeanut    | 100 |
| mengrao      | 100 |
| Doju         | 100 |

## Problem B. Center

This contest is open for practice. You can try every problem as many times as you like, though we won't keep track of which problems you solve. Read the [Quick-Start Guide](#) to get started.

Small input  
13 points

Solve B-small

Large input  
21 points

Solve B-large

## Problem

There are  $N$  weighted points in a plane. Point  $i$  is at  $(X_i, Y_i)$  and has weight  $W_i$ .

In this problem, we need to find a special center of these points. The center is a point  $(X, Y)$  such that the sum of  $\max(|X - X_i|, |Y - Y_i|) * W_i$  is minimum.

## Input

The input starts with one line containing exactly one integer  $T$ , which is the number of test cases.  $T$  test cases follow.

Each test case begins with one line containing one integer  $N$ .  $N$  lines follow. Each line contains three space-separated real numbers  $X_i$ ,  $Y_i$ , and  $W_i$ .  $X_i$ ,  $Y_i$  and  $W_i$  have exactly 2 digits after the decimal point.

## Output

For each test case, output one line containing Case #x: y, where x is the test case number (starting from 1) and y is the sum of  $\max(|X - X_i|, |Y - Y_i|) * W_i$  for center  $(X, Y)$ .

y will be considered correct if it is within an absolute or relative error of  $10^{-6}$  of the correct answer. See the [FAQ](#) for an explanation of what that means, and what formats of real numbers we accept.

## Limits

$1 \leq T \leq 10$ .  
 $-1000.00 \leq X_i \leq 1000.00$ .  
 $-1000.00 \leq Y_i \leq 1000.00$ .

## Small dataset

$1 \leq N \leq 100$ ;  
 $W_i = 1.0$ , for all  $i$ .

## Large dataset

$1 \leq N \leq 10000$ ;  
 $1.0 \leq W_i \leq 1000.0$ , for all  $i$ .

## Sample

| Input            | Output       |
|------------------|--------------|
| 3                | Case #1: 1.0 |
| 2                | Case #2: 4.0 |
| 0.00 0.00 1.00   | Case #3: 1.0 |
| 1.00 0.00 1.00   |              |
| 4                |              |
| 1.00 1.00 1.00   |              |
| 1.00 -1.00 1.00  |              |
| -1.00 1.00 1.00  |              |
| -1.00 -1.00 1.00 |              |
| 2                |              |
| 0.00 0.00 1.00   |              |
| 1.00 0.00 2.00   |              |

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