<C*deVita/>
The TCS Global Coding Contest

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02 Hr 21 Min 40 Sec

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Coding Area

A B C D E F

ONLINE EDITOR (F)

Vaccination

Problem Description

Bio-hazard has taken place in Wonderland. Different viruses have spread across different parts of the cities causing illness in humans and animals. The best biochemical researchers have gathered together to solve this problem. They have found out that there are different types of viruses spreading across regions and they have different density i.e. different levels of concentration. They need to figure out the area which is affected the most (has the highest total density of viruses), by the different kinds of viruses.

The manner in which viruses have spread in the Wonderland have mostly taken the form of triangles which have no obtuse angles. The researchers are tracking the same from another city which can be taken as origin (0, 0). Consider the area of infection (or effective region) of each virus as a 2D triangular area, with one edge of the triangle being on the X axis. The areas of infection of multiple viruses may overlap. In such a case, the density of viruses of the overlap area is the sum of the densities of each virus whose effective region overlaps this area.

The problem is to determine the area of the space which has maximum density of viruses, so that effective countermeasures (a vaccination campaign) can be taken depending on the size of the region.

For the ease of calculation, the researchers always choose the positive XY plane. Also they try to always keep the virus density to a whole number. In case there are more than one overlapping area with maximum density then the area closer to origin, will be treated as area of interest to start vaccination campaign from.

Help the Biochemists to find the area of the region where vaccination should be commenced.

Constraints

Xa, Xb, Xc, Yc > = 0

N >= 1

D = { 0, 1, 2, 3, ... }

Input Format

The first line contains the total number of triangles (N)

Each of the nest N lines contains 5 space delimited integers per line, where the

first value represents the distance of starting point from origin on X-axis (Xa),

second value represents the distant of ending point from origin on X-axis (Xb),

third and fourth point represents the point on XY plane (Xc, Yc),

and the last point is the density of viruses of the given triangle (D).

Output

The 2D area having the maximum density of viruses rounded to the nearest integer (using standard rounding rules).

Test Case

Explanation

Example 1

Input

2

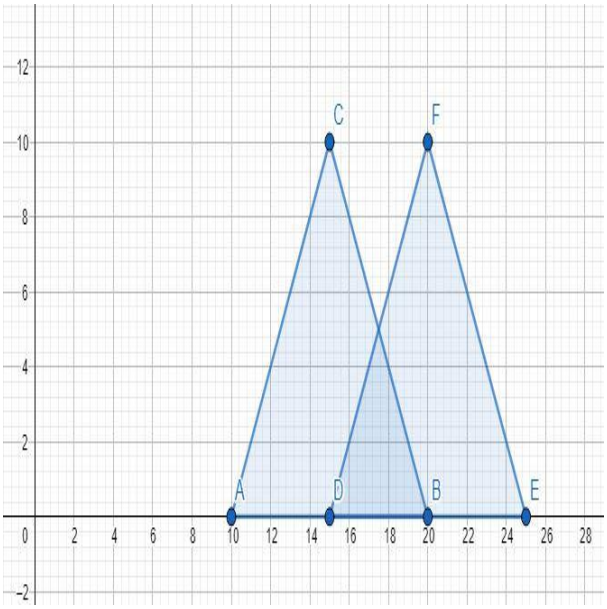
10 20 15 10 40

15 25 20 10 20

Output

13

Explanation



In this case, individually, the triangles have densities of 40 and 20 respectively. Hence the intersection will have overlapping density of 60 (40 + 20), which is the maximum. The maximum density is for the area within points D, B and the intersection between lines DF and BC. Hence, the area between these points (12.5) will be rounded to 13 and returned.

Example 2

Input

3

1 6 4 5 1

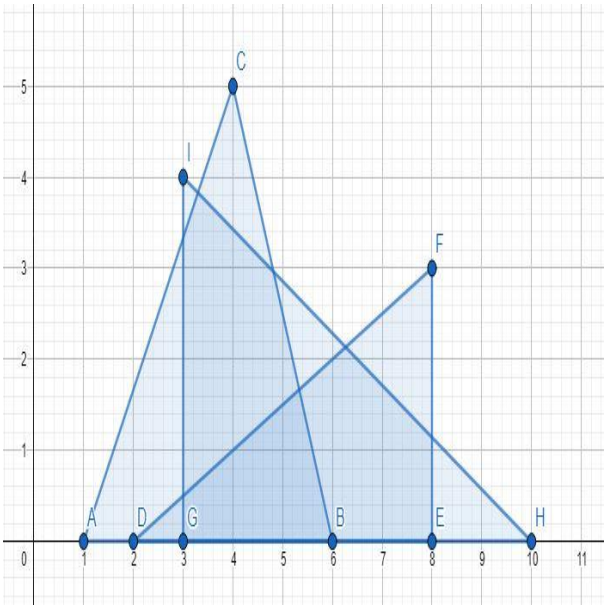
2 8 8 3 2

3 10 3 4 1

Output

3

Explanation



In this case, individually, the triangles have densities of 1, 2 and 1 respectively. Hence the intersection will have overlapping density of 4 (1 + 2 + 1), which is the maximum. The maximum density is for the area within points G, B and the intersection between lines DF& GI and DF&BC. Hence, the area between these points (approximately 3.083) will be rounded to 3 and returned.

Upload Solution [Question : F]

☐ I, **mohit negi** confirm that the answer submitted is my own.

☐ Took help from online sources (attributions)

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