CodeVita
The TCS Global Coding Contest

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05 Hr 56 Min 36 Sec

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Coding Area

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ONLINE EDITOR (B)

Signal Connection

Problem Description

You have been given longitude and latitude of locations from where the channels are going to be broadcasted. You also get the height of tower from which these channels are broadcasted. Moreover, you have been given the location of your friend Jason. You have to calculate how many connections he can make to the towers. Take Radius of earth= 6371 KM.

All the computation has to be accurate up to 6 digits after the decimal point.

Constraints

1 <= N < 10^5

Input

First line contains integer N denoting the number of locations from where the channel is going to be broadcasted

Second line contains N space-separated decimal values denoting latitudes

Third line contains N space-separated decimal values denoting longitudes

Fourth line contains N space-separated integer values denoting the height of tower from which channels are broadcasted

Fifth Line contains two space-separated decimal values denoting latitude, longitude of Jason's location

Output

Print the number of channels Jason can connect with

Time Limit

1

Examples

Example 1

Input

2

19.076090 17.387140

72.877426 78.491684

2 1

18.516726 73.856255

Output

1

Explanation

First latitude and longitude is Mumbai and second is for Hyderabad from where the channel signals are broadcasted. Jason is in Pune. According to signal strength Jason will only be able to connect Mumbai tower.

Example 2

Input

2

28.644800 22.572645

77.216721 88.363892

5 7

48.864716 2.349014

Output

0

Explanation

First latitude and longitude is Delhi and second is for Kolkata from where the channel signals are broadcasted. Jason is in Paris. According to signal strength Jason will not be able to connect any tower.

Upload Solution [Question : B]

☐ I, **venkata sai amrutha anala** confirm that the answer submitted is my own.

☐ Took help from online sources (attributions)

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