

Area of circles

Given N circles. Calculate the total area that these N circles cover.

Input

First line: N ($1 \leq n \leq 50$)

- In the i-th line of the next n lines contains 3 integers X_i , Y_i and R_i , separated by spaces. These are the coordinates of the center and the radius of the i-th circle ($-10000 \leq Y_i - R_i, Y_i + R_i, X_i - R_i, X_i + R_i \leq 10000$)

Output

The total area that these N circles cover with 5 digits after decimal point

Example

Input:

2

5 6 3

5 5 5

Output:

78.53982