

# Area Difference

A gardener bought two sprinklers for his new garden. Each sprinkler moistens the soil around a circle with known radius. One will be working in the morning and the other in the evening. To plan how many plants of different species is better to plant, the gardener wants to know what area of the garden will be watered only in the morning, only in the evening or both in the morning and in the evening. After some searching on the Internet, he found a formula for calculating the area of intersection of circles, but for some reason the formula that would help to calculate the remaining two areas was not found.

## Input

The first line contains  $T$  ( $1 \leq T \leq 1000$ ) - the number of tests. The next  $T$  lines contain six integers  $x_1, y_1, r_1, x_2, y_2$  and  $r_2$  ( $0 \leq x_i, y_i, r_i \leq 10000$ ) - coordinates and radii of the first and second sprinkler, respectively.

## Output

For each test case print the absolute value of the difference between the the area that is going to be watered only in the moring and the area that is going to be watered only in the evening rounded to two decimals after the point. Your score is the source length.

## Example

**Input:**

```
1
2 2 4 5 2 3
```

**Output:**

```
21.99
```