

STA Online Computer Programming Contest (DWITE)
October 2004

Problem 1

Area of Circle

Given the Cartesian plane coordinates for the centre of a circle (x_1, y_1) and a point on the circle's circumference (x_2, y_2) , calculate the area of the circle.

Recall the formula for the area of the circle is πr^2 .

Recall also the formula for the distance between two points is $\sqrt{(y_2 - y_1)^2 + (x_2 - x_1)^2}$

For this particular program assume $\pi = 3.14159$.

The input file (DATA1) will contain five lines of data. Each line will contain four real values, each separated by a single space, x_1, y_1, x_2 and y_2 representing the coordinates.
 $-10000 \leq x_1, y_1, x_2, y_2 \leq 10000$

The output file (OUT1) will contain five lines of data, corresponding to the input file. Each line will contain the area of the circle in square units rounded to three decimal places.

Sample Input (Only three lines given)

```
2 4 4 8
1 1 1 2
10.25 10.5 100 75.8
```

Sample Output

```
62.832
3.142
38701.726
```