COMPUTER SCIENCE
PROGRAMMING QUESTION

TYPE 1: INPUT AND OUTPUT **LEVEL 1**

1.

Question Description

Compute the area of a triangle when the lengths of all three sides are known. Let s1, s2 and s3 be the lengths of the sides. Let s = (s1 + s2 + s3)/2. Then the area of the triangle can be calculated using the following formula: area =sqrt(s × (s − s1) × (s − s2) × (s − s3)) Develop a program that reads the lengths of the sides of a triangle from the user and displays its area.

Function Description

area =sqrt(s × (s − s1) × (s − s2) × (s − s3))

Constraints

s1,s2,s3>0

Input Format

Refer the Testcases

Output Format

Print the following:

The area of triangle is required answer. Refer the Testcases.

Test Case 1

INPUT (STDIN)

```
5
4
3
```

EXPECTED OUTPUT

```
The area of triangle is 6.0
```

Test Case 2

INPUT (STDIN)

```
5
5
5
```

EXPECTED OUTPUT

```
The area of triangle is
10.825317547305483
```

2.

Question description

Vetrivel wants to convert the units of time into seconds. He gets the days, hours, minutes, seconds from the user. Can you help him to convert the units in to seconds.

Input Format

Number of days, hours, minutes and seconds will be given which separated by enter key.

Output Format

Refer the Testcases

Test Case 1

INPUT (STDIN)

```
2
1
1
1
```

EXPECTED OUTPUT

```
176461
```

Test Case 2

INPUT (STDIN)

```
3
2
1
1
```

EXPECTED OUTPUT

```
266461
```

3.

Question description

Laasya bought a new volleyball in the sports shop. It looks like a medium size.

She somehow found the radius of the sphere.

But she would like to know the volume of that ball.

Can you help him in finding the Volume of the ball?

Function Description

Volume = (4.0/3.0) × π × r^3
where π = 3.14

Constraints

$1.00 \leq r \leq 5.00$

Input Format :

The only line of input has a single value of type float representing the radius of the ball.

Output Format:

Print the volume of the ball in a single line.

Refer the Testcases

Test Case 1

INPUT (STDIN)

```
2.56
```

EXPECTED OUTPUT

```
70.24061098666668
```

Test Case 2

INPUT (STDIN)

```
3.1
```

EXPECTED OUTPUT

```
124.72498666666668
```

4.

Question Description

Vignesh wants to display your details like name, Degree and Branch in the different lines. Can you help him to program for displaying academic details.

Function Description

Use format() function

Output Format

Refer Testcases.

Test Case 1

INPUT (STDIN)

```
Arul
B.Tech CSE
```

EXPECTED OUTPUT

```
Name: Arul
Degree: B.Tech CSE
```

Test Case 2

INPUT (STDIN)

```
Manikandan
B.Sc Mathematics
```

EXPECTED OUTPUT

```
Name: Manikandan
Degree: B.Sc Mathematics
```

5.

Question description

Binita was travelling from Chennai to Delhi in Rajdhani Express. The train have arrived at the destination later than the estimated time. So, Binita wants to know the total number of hours and minutes the train was delayed. Can you help Binita in finding the exact hour and time Rajdhani Express was delay on the day of Binita's journey?

Constraint

$100 \leq tot\_mins \leq 550$

Input Format

The only line of input has single value of variable tot_mins of integer type representing total minutes.

Output Format

Print the Number of Hours and Minutes in a single line. Refer the Testcases.

Test Case 1

INPUT (STDIN)

```
546
```

EXPECTED OUTPUT

```
9 Hours and 6 Minutes
```

Test Case 2

INPUT (STDIN)

```
101
```

EXPECTED OUTPUT

```
1 Hours and 41 Minutes
```

6.

Problem Description:

Arif planned to make a room cleaning robot for his college mini project competition.

First he has to code program to simulate the robot movements inside the room.

He measured the length and width of the room.

Once the values are available, his program should compute and display the area of the room.

Can you help Arif with a suitable logic for the code?

Constraint:

$20.00 \leq \text{length} \leq 100.00$

$20.00 \leq \text{width} \leq 100.00$

Input format

First Line has single floating point number representing length of the room
Second Line has single floating point number representing width of the room

Output format

Print the area of the room correcting to two decimal places.

Test Case 1

INPUT (STDIN)

```
23.44
22.33
```

EXPECTED OUTPUT

```
523.42
```

Test Case 2

INPUT (STDIN)

```
27.42
29.35
```

EXPECTED OUTPUT

```
804.78
```

7.

Question description

In geometry, the area enclosed by a circle of radius r is πr^2. Here the Greek letter π represents a constant, approximately equal to 3.142, which is equal to the ratio of the circumference of any circle to its diameter. Subash wants to find the area of circle for the given radius. Can you help him to calculate the area of circle for the given radius?

Constraints

Subash has to declare the radius named as r with float datatype and pi as 3.142 without importing math

Input Format

Refer the Testcases

Output Format

Use str() to print the output. Refer the Testcases.

Test Case 1

INPUT (STDIN)

```
1.1
```

EXPECTED OUTPUT

```
The area of the circle with radius 1.1 is: 3.8018200000000006
```

Test Case 2

INPUT (STDIN)

```
2.0
```

EXPECTED OUTPUT

```
The area of the circle with radius 2.0 is: 12.568
```

8.

Question description

2^{15} = 32768 and the sum of its digits is 3 + 2 + 7 + 6 + 8 = 26.

What is the sum of the digits of the number 2n ?

Constraints

$1 \leq n \leq 1000$

Input Format:

Refer the test cases

Output Format:

Refer the test cases

Test Case 1

INPUT (STDIN)

```
1000
```

EXPECTED OUTPUT

```
1366
```

Test Case 2

INPUT (STDIN)

```
100
```

EXPECTED OUTPUT

```
115
```

9.

Athika and Ritu got a nice job at a MNC company . She was confused with the salary credited in her account.

To verify if the correct amount of HRA and DA was provided to them.

Ritu and Athika planned to develop a software that calculates the salary pay if the basic pay was provided.

The Salary policy of Athika and Ritu's Company is as follows: HRA is 80% of the basic pay and DA is 40% of basic pay.

Can you help Ritu and Athika in the software development?

Constraints

20000≤basic≤75000

Input Format

Single Integer representing the basic pay of the employee.

Output Format

Print the Gross salary of employee by adding the certain amount of HRA and DA to the basic pay and correcting to 2 decimal places.

Test Case 1

INPUT (STDIN)

```
25462
```

EXPECTED OUTPUT

```
56016.40
```

Test Case 2

INPUT (STDIN)

```
37135
```

EXPECTED OUTPUT

```
81697.00
```

10.

Question description

Janaki wants to find the distance between the two points (x1,y1) and (x2,y2). She know the formula for the distance is sqrt((x2-x1)**2+(y2-y1)**2). Can you help her to create a program for finding the distance?

Function Description

Distance between the two points (x1,y1) and (x2,y2) is (x2-x1)2+(y2-y1)2

Input Format

First line represent the x1 value

Second line represent the y1 value

as like for getting the x2 and y2 values in the separate lines.

Output Format

Refer Testcases

Test Case 1

INPUT (STDIN)

```
1
1
3
3
```

EXPECTED OUTPUT

```
2.8284271247461903
```

Test Case 2

INPUT (STDIN)

```
0
1
2
2
```

EXPECTED OUTPUT

```
2.23606797749979
```