COMPUTER SCIENCE
PROGRAMMING QUESTION

TYPE 1: INPUT AND OUTPUT **LEVEL 2**

1.

Question description

Write a program that computes the value of a+aa+aaa+aaaa with a given digit as the value of a.

Suppose the following input is supplied to the program: 9 Then, the output should be: 11106

Test Case 1

INPUT (STDIN)

```
2
```

EXPECTED OUTPUT

```
2468
```

Test Case 2

INPUT (STDIN)

```
3
```

EXPECTED OUTPUT

```
3702
```

2.

Problem Description:

Flipkart announced the year end stock clearance sale and as apart of they have also conducting the contest and the users answering the questions asked in the contest can win Moto One Power free of cost.

The task is to display the first three powers (N^1, N^2, N^3) of the given.

Nishanth was looking to buy Moto One Power.

If you help nishanth in solving the task he will get his favorite mobile.Can you help him?

Constraints:
1 <= N <= 150

Input Format:
Only line of the input has a single integer representing N.

Output Format:
Print the first three powers of N in a single line separated by a space.

Test Case 1

INPUT (STDIN)

```
137
```

EXPECTED OUTPUT

```
137 18769 2571353
```

Test Case 2

INPUT (STDIN)

```
98
```

EXPECTED OUTPUT

```
98 9604 941192
```

3.

Problem Description:
Jannu and Preethi both went to Egypt for visiting Pyramids.

On seeing the Pyramids they were in discussion.

During the discussion Jannu asked Preethi, what will be the area of this Pyramid.

Preethi have no idea about it.

Can you help Preethi in calculating the area of this Pyramid?
Functional Description:
Area = (height * base)/2

Constraints:
1 <= height <= 500
1 <= base <= 500

Input Format:
The only line of input has two floating point values representing height and base respectively separated by a space.

Output Format:
In the only line of output print the area of the pyramid with only three values after decimal point.

Test Case 1

INPUT (STDIN)

```
31.5 43.7
```

EXPECTED OUTPUT

```
688.275
```

Test Case 2

INPUT (STDIN)

```
176.3 120.6
```

EXPECTED OUTPUT

```
10630.890
```

4.

Problem Description:

Salima saw a pair of beautiful dress online but she was confused about the metric system used for the size of the dress.

It was given in feet and inches, even in some countries that primarily use some other metric system.

As Salima knows a little bit of programming she thought of creating a program that gets number of feet and inches and compute the height of the customer in centimeters.

Functional Description:

One foot is 12 inches.

One inch is 2.54 centimeters.

Constraints:

$5 \leq feet \leq 7$

$5 \leq inches \leq 7$

Input format :

Only line of input has two numbers of type integer representing the feet and inches separated by a space

Output format :

Print the Height of the customer in centimeters

Test Case 1

INPUT (STDIN)

```
5 5
```

EXPECTED OUTPUT

```
Your height in centimeters is : 165.10
```

Test Case 2

INPUT (STDIN)

```
7 1
```

EXPECTED OUTPUT

```
Your height in centimeters is : 215.90
```

5.

Problem Description

Yasir was making a kite.His sister Athika said that she can print the frame of the kite using biodegradable material and a 3D printer .

The shape of the frame is simple in the top it is triangle between the triangles mid point there comes a straight thicker line which extends upto the bottom.

Once printed a sheet of paper can be used to cover the frame. Athika made the frame using the 3d printer and asked Yasir to buy a sheet of paper .

But Yasir wants to know the exact area covered by the top triangle of the frame.

Athika had the dimensions fed in her laptop help her to compute the area of the triangle using the 3 sides.

Functional Description :

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))

Constraints:

$1.00 \leq s1 \leq 10.00$

$1.00 \leq s2 \leq 10.00$

$1.00 \leq s3 \leq 10.00$

Input Format:

First Line: Single value representing the Length of side1

Second Line: Single value representing the Length of side2

Third Line: Single value representing the Length of side3

Output Format:

Print the area of the triangle.

Test Case 1

INPUT (STDIN)

```
3.28
4.33
5.23
```

EXPECTED OUTPUT

```
7.08
```

Test Case 2

INPUT (STDIN)

```
4.19
3.26
5.28
```

EXPECTED OUTPUT

```
6.83
```

6.

Problem Description:
Surya was used to wear a smartwatch when he was in the Treadmill and during Cycling.

Surya's Smart watch displays the total workout time in seconds.

But Surya would like to know the time he spent for workout in H:M:S format.

Can you help surya in knowing the time he spent on workout in the prescribed format?

Constraints:
1 <= sec <= 10000

Input Format:
The only line of output represents the workout timing in seconds

Output Format:
In the only line of output print the workout timing of surya in the prescribed format.

Refer sample testcases for format specification.

Test Case 1

INPUT (STDIN)

```
7845
```

EXPECTED OUTPUT

```
2H:10M:45S
```

Test Case 2

INPUT (STDIN)

```
9871
```

EXPECTED OUTPUT

```
2H:44M:31S
```

7.

Problem Description:

Nancy is a data scientist. She regularly faces about Terra bytes of data in her work .

One day she was working on an application that collects users address and stores it based on the type of field it has to be .

Unfortunately the application malfunctioned and the data collapsed .

Nancy now has the burden of arranging the users data into their respective field can you help her ?

Constraint:
$0000 \leq hno \leq 9999$
$100000 \leq pincode \leq 999999$

$1000 \leq employeeID \leq 9999$
$000 \leq areacode \leq 999$

Input Format:

First line of input represents hno

Second line of input represents pincode

Third line of input represents employeeID

Fourth line of input represents areacode

Output Format:
Print the output as per the format specification in the testcases.

Test Case 1

INPUT (STDIN)

```
73 613004 103245 14
```

EXPECTED OUTPUT

```
EmployeeID : 103245
Area Code : 14
House Number : 73
Pincode : 613004
```

Test Case 2

INPUT (STDIN)

```
139 613012 109651 19
```

EXPECTED OUTPUT

```
EmployeeID : 109651
Area Code : 19
House Number : 139
Pincode : 613012
```

8.

Problem Description:
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EXPECTED OUTPUT

```
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9.

Problem Description:
Arulmozhivarman's Dream came true after he got an Appointment order from Google.Simon's family was very happy of his achievement.

The company mentioned Basic Salary, DA, HRA with some other benefits.

But not highlighted the Gross salary in the order.

Arulmozhivarman's father wanted to know the Gross salary of his son.

Can you help Arulmozhivarman's father calculating it?

Functional Description:

Gross Salary Calculation = basic + da + hra

DA Calculation = da x basic / 100
HRA Calculation = hra x basic / 100
Constraints:
1 <= basic <= 1000000
1 <= da <= 5000
1 <= hra <= 5000

Input Format:
The First line of the input represents Basic Salary
The Second line of the input represents DA
The Third line of the input represents HRA

Output Format:
Print the gross salary of the Arulmozhivarman in a single line.

Test Case 1

INPUT (STDIN)

```
75761
1870
3550
```

EXPECTED OUTPUT

```
4182007
```

Test Case 2

INPUT (STDIN)

```
81871
1750
2100
```

EXPECTED OUTPUT

```
3233904
```

10.

Question description

Raja is the first year B.Tech CSE student. He wants to find the determinant of given square matrix. Can you help him to verify his answer?

Function Description

abcd=ad-bc

Constraints

$0 \le a,b,c,d \le 50$ and a, b, c, d are integers

Input Format:

First line represents the elements of first row separated by space

Second line represents the elements of second row separated by space

Output Format

Print the determinant value

Test Case 1

INPUT (STDIN)

```
1 2
3 4
```

EXPECTED OUTPUT

```
-2
```

Test Case 2

INPUT (STDIN)

```
1 0
0 1
```

EXPECTED OUTPUT

```
1
```