Course	C	Session	Input & Output	Question Information	• Level 1 • Challenge 1

Problem

Problem Description:
Ramesh is working in an engineering college hostel as a Mess supervisor. There are different messes are available based on the years.

Every day students count is varying in all the hostels due to continuous holidays.

Since ramesh is in charge of the cooking team. He had trouble with calculating the quantity of food that needs to be prepared because of the varying student count.

Even if a small quantity of food is prepared by the cooking team, it should be divided equally among the number of Mess.Ramesh needs an automated software to identify the amount of food available (in number of packets) and Mess count.

Can you help him to divide the food equally and also calculating the remaining quantity of food that will be available after sharing the food equally ?

Constraints:
$1 \leq$ alvqntoffood ≤ 10000
$1 \leq$ messcnt ≤ 20

Input Format:
Only line of input has two integers (alvqntoffood, messcnt) separated by space representing the available number of food packets and the available number of messes respectively

Output Format:

In the only line of output print two values separated by a space representing the number of food packets that are equally shared by "n" number of messes and the remaining number of food packets available.

Logical Test Cases

Test Case 1

INPUT (STDIN)

Test Case 2

INPUT (STDIN)

Problem

Problem Description:

Tina's brother gave her a friendly task of calculating the number of squares in a board that has n*n squares of dimensions 1cm *1cm each.

Help her to find the number of total squares including all small and big ones.

Constraints:

$2 \leq n \leq 20$

Input Format:

The only line of the input represents a value of "n"

Output Format:

Print the number of squares in the n*n board."

Logical Test Cases

Test Case 1

INPUT (STDIN)

```
14
```

EXPECTED OUTPUT

```
1015
```

Test Case 2

INPUT (STDIN)

```
19
```

EXPECTED OUTPUT

```
2470
```

Mandatory Test Cases

Course	C	Session	Input & Output	Question Information	• Level 1 • Challenge 3

Problem

Problem Description:

Rathik organized technical round interview in Macrosoft for the set of computer science candidates.

The problem is to perform addition, subtraction, multiplication, and division of given two numbers.

Rathik have given the deadline of only 5 minutes to complete the problem.

Can you Help the candidates to complete the problem within the specified time limit ?

Constraint:

$1 \leq testnum1 \leq 50$

$1 \leq testnum2 \leq 50$

Input Format :

The only line of input has two numbers a and b of type integers separated by a comma.

Output Format:

Print Addition, Subtraction, Multiplication, Division, and Modulus of given two numbers in a separate line respectively.

Note: Rathik instructed his candidates to print the result of the division with 3 values after decimal point.

Logical Test Cases

Test Case 1

INPUT (STDIN)

```
17 13
```

EXPECTED OUTPUT

Test Case 2

INPUT (STDIN)

```
31 4
```

EXPECTED OUTPUT

Course	C	Session	Input & Output	Question Information	• Level 1 • Challenge 4

Problem

Problem Description:

The employees of one million dollar profit company TeamZilla organised the strike because they want to have additional salary increment, the strike is continuing for more than a month now.

Rathik the CEO of TeamZilla has found the solution to break the strike, so he organised a small technical competition for his employees.

Most of the employees who were part of the strike have participated in the technical event announced and in that there was a task of printing the ASCII Value of the character inputted.

Can you help them to complete the task and win the competition?

Constraint:
$a \leq Asc \leq z$
$A \leq Asc \leq Z$

Input format:

Only Line of input represents a single alphabetic character.

Output format:

Print the integer ASCII value corresponding to the input alphabet.

Logical Test Cases

Test Case 1

INPUT (STDIN)

```
g
```

EXPECTED OUTPUT

Test Case 2

INPUT (STDIN)

```
Y
```

EXPECTED OUTPUT

Course	C	Session	Input & Output	Question Information	• Level 1 • Challenge 5

Problem

Problem Description:

Elavenil runs a popular bakery in his native. Elavenil has now finished baking and frosting his cupcakes, it's time to package them. Elavenil has N cupcakes, and needs to decide how many cupcakes to place in each package.

Each package must contain the same number of cupcakes. Elavenil will choose an integer A between 1 and N, inclusive, and place exactly A cupcakes into each package.

Elavenil makes as many packages as possible. Elavenil then gets to eat the remaining cupcakes. Elavenil enjoys eating cupcakes very much. Help Elavenil choose the package size A that will let him eat as many cupcakes as possible.

Constraints:

$2 \leq N \leq 10000$

Input Format:

Only line of input consists of a single integer N representing the number of cupcakes.

Output Format:

Print the package size that will maximize the number of leftover cupcakes.

If multiple package sizes will result in the same number of leftover cupcakes, print the largest such size.

Logical Test Cases

Test Case 1

INPUT (STDIN)

```
7643
```

EXPECTED OUTPUT

Test Case 2

INPUT (STDIN)

```
3895
```

EXPECTED OUTPUT

Course	C	Session	Input & Output	Question Information	• Level 1 • Challenge 6

Problem

Problem Description:

Sajid was booking a train ticket from Chennai to Delhi for his family. Two of the relatives was interested in joining that journey from different places with their family members

So, Sajid booked tickets for those persons also along with his family members.

He wants to know the total number of tickets for this travel.

Can you help him in finding the total number of passengers?

Constraint:
Sajid has to declare three integer variables named as num1, num2, num3.

$1 \leq num1 \leq 15$

$1 \leq num2 \leq 15$

$1 \leq num3 \leq 15$

Input Format:

Only Line of input has three integers num1,num2 and num3 separated by a space representing the numbers of ticket booked by Sajid at three different interval of time.

Output Format:

Print the total number of tickets booked by Sajid.

Logical Test Cases

Test Case 1

Test Case 2

CHALLENGE INFORMATION

Course	C	Session	Input & Output	Question Information	• Level 1 • Challenge 7

Problem

Problem 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?

Functional Description:

Volume = (4.0/3.0) × π × r^3

π = 3.14

Constraint:

1.00 ≤ r ≤ 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.

Logical Test Cases

Test Case 1

INPUT (STDIN)

Test Case 2

INPUT (STDIN)

Course	C	Session	Input & Output	Question Information	• Level 1 • Challenge 8

Problem

Problem Description:
Arif came from a very low income family.

However, his father Irfan, sent him abroad for the purpose of studying.

Arif also concentrated well in his learning keeping in mind his father's poverty.

Arif was excellent in mathematics.

One day Arif had a computer class and his computer teacher asked him to create a programming logic for the mathematics problem of multiplying two numbers of type float.

Constraints:
1.00≤ var1 ≤1000.00
1.00≤ var2≤1000.00

Input Format:
The only line of input has two floating point numbers separated by space

Output Format:
In the only line of output print the result of the multiplication with 4 values after decimal point.

Logical Test Cases

Test Case 1

INPUT (STDIN)

```
467.78 762.89
```

EXPECTED OUTPUT

Test Case 2

INPUT (STDIN)

```
945.16 187.49
```

EXPECTED OUTPUT

Course	C	Session	Input & Output	Question Information	• Level 1 • Challenge 9

Problem

Problem Description:

During the IPL Match between CSK and MI, as a part of IPL contest the question was asked to the fans.

Who are all giving the correct answer to that question will get the free VIP box ticket for the Final for which CSK have already qualified .

The question is convert given integer number to octal and hexadecimal number respectively.

Abilash is an die heart CSK fan. Can you help him answer the question so that he can watch CSK play the final from VIP box?

Constraints:

1≤iplno≤10000

Input Format:

Only line of input has single integer number that need to be converted.

Output Format:

In the First line of output print the octal number equivalent to the input value.

In the Second line of output print the hexadecimal number equivalent to the input value.

Logical Test Cases

Test Case 1

INPUT (STDIN)

```
1953
```

EXPECTED OUTPUT

```
3641
```

Test Case 2

INPUT (STDIN)

```
8751
```

EXPECTED OUTPUT

```
21057
```

Course	C	Session	Input & Output	Question Information	• Level 1 • Challenge 10

Problem

Problem Description:

The Electricity Officer has mentioned the total counts of unit and amount. The officer inform the customer the bill amount in a unique format.

The format given by electricity officer as follow:

But customers are finding the difficult to find the exact amount that needs to be paid.

Can you help the customers?
Functional Description:

Total Bill Amount = unitconsumed ^ costperunit
Constraints:
$1 \leq$ unitconsumed ≤ 500

$2 \leq$ costperunit ≤ 10

Input Format :

The first line of input represents the integer value of unitconsumed
The second line of input represents the integer value of costperunit

Output Format:

Print the total Bill amount in single line.

Logical Test Cases

Test Case 1

INPUT (STDIN)

Test Case 2

INPUT (STDIN)

Course	C	Session	Flow Control & Operators	Question Information	• Level 1 • Challenge 11

Problem

Problem Description:

The Election Commission of India distributed the voter ID to all eligible citizens.

But Amira didn't received a Voter ID on time.

So, she gets confused about her eligibility for voting?

Can you clarify her doubt?

Condition for Eligibility as per Election Commission of India is

(i) Eligible if age >=18

(i) Not Eligible if age <18

Constraints :
1≤age≤100
Input Format:

The only line of input has single value of type integer representing age.

Output Format:

Print as Eligible or Not Eligible based on the eligibility criteria in a single line.

Logical Test Cases

Test Case 1

INPUT (STDIN)

Test Case 2

INPUT (STDIN)

Course	C	Session	Flow Control & Operators	Question Information	• Level 1 • Challenge 12

Problem

Problem Description:

There are two monkeys on an x-axis ready to jump in the positive direction (i.e, toward positive infinity).

The first monkey starts at location x1 and moves at a rate of v1 meters per jump.

The second monkey starts at location x2 and moves at a rate of v2 meters per jump.

Given the starting locations and movement rates for each monkey, can you determine if they'll ever land at the same location at the same time?

Constraints:

- $0 \le x1 < x2 \le 10000$
- $1 \le v1 \le 10000$
- $1 \le v2 \le 10000$

Input Format

A single line of four space-separated integers denoting the respective values of x1, v1, x2 and v2.

Output Format:

Print YES if they can land on the same location at the same time; otherwise, print NO.

Note: The two monkeys must land at the same location after making the same number of jumps.

Logical Test Cases

Test Case 1

INPUT (STDIN)

```
0 3 4 2
```

Test Case 2

INPUT (STDIN)

```
0 2 5 3
```

Course	C	Session	Flow Control & Operators	Question Information	• Level 1 • Challenge 13

Problem

Problem Description:

Arav and Aaron are participating in the Bike racing. Arav have crossed some milestores earlier and Aaron crossed some milestores earlier during their racing,because they have changed their speeds at different times.

Both of them like to know the difference in speeds between them at different stages of racing.

Can you help finding the speed difference between Arav and Aaron?
Constraints:

20≤ aravspeed ≤100

20≤ aaronspeed ≤100
Input Format :

The first line of input represents the speed of Arav.

The second line of input represents the speed of Aaron.

Output Format:

Print difference between the driving speed of two participants in a single line.

Logical Test Cases

Test Case 1

INPUT (STDIN)

```
74
51
```

Test Case 2

INPUT (STDIN)

```
76
89
```

Course	C	Session	Flow Control & Operators	Question Information	Level 1 • Challenge 14

Problem

Problem Description:

While purchasing certain items, a discount of 10% is offered by the popular super market if the quantity purchased is more than 1000.

Since number of people purchasing is increasing day by day the owner of the super market feels that the discount calculation will be better if there is a automated software that gives the total expenses If the quantity and price per item are input.

Constraints:

$1 \leq quantity,price \leq 100000$

Input Format:

Only line of input has two integers separated by a space representing quantity and price respectively.

Output Format:

In the only line of the output print the total expenses of the purchased items.

Logical Test Cases

Test Case 1

INPUT (STDIN)

```
1550 827
```

EXPECTED OUTPUT

```
1153665
```

Test Case 2

INPUT (STDIN)

```
759 235
```

EXPECTED OUTPUT

```
178365
```

Course	C	Session	Flow Control & Operators	Question Information	Level 1 Challenge 15

Problem

Problem Description:

Arulmozhivarman is working in ship. He is responsible for classifying the ship into different classes based on the letterclass ID of the ship.

Since Arulmozhivarman is working on the same task over the long period of time he is bored of doing the same work again and again.

He will enjoy his time in the ship if has a automated script that can classify the ships into different classes if the letterclass id of the ship is provided.

Can you help Arulmozhivarman?

Function Description:

Use the table below and display the equivalent string class description of the given ID.

Class ID	Ship Class
B or b	BattleShip
C or c	Cruiser
D or d	Destroyer
F or f	Frigate

Input Format:

Only Line of Input has single character representing the Class ID of the ship.

Output Format:

In the only line of output print the string class description of the given ID.

Logical Test Cases

Course	C	Session	Flow Control & Operators	Question Information	Level 1 • Challenge 16

Problem

Problem Description:

Swathi is working in a world famous pizza restaurant.

Her manager ordered her to verify the size of the pizza such that it slices forms an exact triangle.

She was given 3 values representing three angles of the slices cut down by chefs and she has to find out whether the slice is Valid or Not.

Can you help her in finding it?

Constraints:

30 <=angle1<= 90,

30 <=angle2<=90,

30<=angle3<=90

Note:

The Pizza Slice is Valid only if the sub of all the angle of the slice is equal to 180 degree.

Input Format:

Single line has three integer values separated by space representing three angles of the pizza slice

Output Format:

Print as "Pizza Slice is Valid" or "Pizza Slice is Not Valid" accordingly.

Logical Test Cases

Test Case 1	Test Case 2

Problem Description:

Agathiyan is the Chief In charge for carrying out World Economic Survey in India.

As a part of survey his team have collected the salaries of the citizens of India.

The Salaries of different people are in different number of digits.

Now Agathiyan would like to classify the earnings of the citizen based on the number of digits of his/her salary into 5 different categories as follows:

1.Insufficient Earning

2.Very Low Earning

3.Low Earning

4.Sufficient Earning

5.High Earning

Can you help him do the above classification if he gives the salary of the particular person to you as input?

Problem

Constraints:

$0 \leq N \leq 1000000$

Input Format:

Only line of input will contain the number N.

Output Format:

Print "Insufficient Earning" if N is a 1 digit number.

Print "Very Low Earning" if N is a 2 digit number.

Print "Low Earning" if N is a 3 digit number.

Print "Sufficient Earning" if N has more than 4 digits.

Print "High Earning" if N has more than 4 digits.

Refer Sample testcases.

Course	C	Session	Flow Control & Operators	Question Information	Level 1 Challenge 18

Problem

Problem Description:
Rohit has 'A' Chocolates and Mohit has 'B' Chocolates.

Rohit will do the following action 'K' times.

If Rohit has one or more Chocolates, eat one of his Chocolates.
Otherwise, if Mohit has one or more Chocolates, eat one of Mohit's Chocolates.
If they both have no Chocolates, do nothing.

Constraints:
0 <= A <= 10^12
0 <= B <= 10^12
0 <= K <= 10^12
All values in input are integers.

Input Format:
Only line of input has three integers A B K separated by as space

Output Format:
Print the numbers of Chocolates Rohit and Mohit have respectively after K actions

Logical Test Cases

Test Case 1

INPUT (STDIN)

```
211 232 56
```

Test Case 2

INPUT (STDIN)

```
173 93 39
```

Course	C	Session	Flow Control & Operators	Question Information	Level 1 • Challenge 19

Problem

Problem Description:
In the Attacking war game Amit and Arun will have a battle using their monsters.

The health and strength of Amit's monster are A and B, respectively, and those of Arun's monster are C and D, respectively.

The two monsters will take turns attacking, in the order Amit's, Arun's, Amit's, Arun's, ... Here, an attack decreases the opponent's health by the value equal to the attacker's strength.

The monsters keep attacking until the health of one monster becomes 0 or below.

The person with the monster whose health becomes 0 or below loses, and the other person wins.

Constraints:
$1 \leq A, B, C, D \leq 50$

Input Format:

Only line of input has 4 integers A B C and D separated by a space representing the strengths of Amit and Arun's monsters.

Output Format:
In the only line of If Amit will win, print Yes; if he will lose, print No.

Logical Test Cases

Test Case 1

INPUT (STDIN)

```
46 14 40 23
```

EXPECTED OUTPUT

Test Case 2

INPUT (STDIN)

```
36 11 29 9
```

EXPECTED OUTPUT

Course	C	Session	Flow Control & Operators	Question Information	Level 1 • Challenge 20

Problem

Problem Description:
A triple of numbers is said to be poor when two of those numbers are equal but the other number is different from those two numbers.

You will be given three integers A, B, and C.

Constraints:
1 <= A, B, and C <= 50

Input Format:
Only line of input has three integers A B C separated by a space.

Output Format:
Print the output in a single line If the given triple is poor, print Yes; otherwise, print No.

Logical Test Cases

Test Case 1

INPUT (STDIN)

```
23 18 34
```

EXPECTED OUTPUT

```
No
```

Test Case 2

INPUT (STDIN)

```
39 28 39
```

EXPECTED OUTPUT

```
Yes
```

Mandatory Test Cases