Course: OOPS **Session:** I/O Operations **Timestamp:** 2020-8-13 19:05:55 **Register Number:** RA1911026010033

Q. Upper case conversion

Kamal is struggling to convert the characters of given string to upper case.
Help Kamal to convert the given string to upper case.Refer the following sample test cases.
Refer Sample Test Cases.

Source Code

```
#include <iostream>
using namespace std;
int main() {
 string str;
   cin >> str;
   for(int i = 0; i < str.size(); i++){
      putchar(toupper(str[i]));
    }
 return 0;
}
```

Sample Input

abcde

Sample Output

ABCDE

Result

Thus, Program " **Upper case conversion** " has been successfully executed

Course: OOPS **Session:** I/O Operations **Timestamp:** 2020-8-13 19:06:13 **Register Number:** RA1911026010033

Q. Swim

Gowtham is planning to go for swimming classes. He would prefer to enroll in the center which has the swimming pool of a greater area.
In the first centre that he visit, the swimming pool is a circular shape(radius-r).
In the next centre that he visit, the swimming pool is of a square shape (side-S).
Create a logic that will help him to make the choice of the swimming pool.
Input :
Input consists of 2 integers.
The first integer correspond to the radius (r) of the circular swimming pool.
The second integer corresponds to the side (S) of the square swimming pool.
Refer sample test cases.

Source Code

```
#include <iostream>
using namespace std;
int main() {
 int radius,size;
   cin >> radius >> size;
   float Carea = 3.14 * radius * radius;
   float Sarea = size * size;
   if(Carea > Sarea){
    cout << "I prefer centre 1" << endl;
   }else{
    cout << "I prefer centre 2" << endl;
   }

 return 0;
}
```

Sample Input

```
6
4
```

Sample Output

```
I prefer centre 1
```

Result

Thus, Program " **Swim** " has been successfully executed

Course: OOPS **Session:** I/O Operations **Timestamp:** 2020-8-13 19:06:29 **Register Number:** RA1911026010033

Q. Waiting or Not Waiting

Raju's maths teacher gave him a task of identifying the number name.
If the number is greater than 0 then he should utter to the teacher as "I am waiting".
If the number is less than 0 then he should utter the word as "I am not waiting".
If the number is "0" the he should utter the word as "Sorry" Help him by completing his task.
Refer Sample Test Cases.

Source Code

```
#include <iostream>
using namespace std;
int main() {
   int number;
   cin >> number;
   if(number > 0){
     cout << "I am waiting" << endl;
    }else if(number == 0){
     cout << "Sorry" << endl;
    }else{
     cout << "I am not waiting" << endl;
    }
 return 0;
}
```

Sample Input

15

Sample Output

I am waiting

Result

Thus, Program " **Waiting or Not Waiting** " has been successfully executed

Course: OOPS **Session:** I/O Operations **Timestamp:** 2020-8-13 19:06:42 **Register Number:** RA1911026010033

Q. You and Me

In Argentina the COUPLE GAMESHOW named You and Me is going to happen.
In order to complete the application process for the game show the participants need to find their average age.
Can you help them them to find their average age?
Refer sample input and output in the test cases.

Source Code

```
#include <iostream>
using namespace std;
int main() {
 int num1,num2,average;
   cin >> num1 >> num2;
   average = ( num1 + num2 ) / 2;
   cout << "I am " << num1 << endl << "You are " << num2 << endl << "We are around " << average << endl;
 return 0;
}
```

Sample Input

```
28
24
```

Sample Output

```
I am 28
You are 24
We are around 26
```

Result

Thus, Program " **You and Me** " has been successfully executed

Course: OOPS **Session:** I/O Operations **Timestamp:** 2020-8-13 19:06:56 **Register Number:** RA1911026010033

Q. Dhoni and Ziva in Chennai

Dhoni's daughter Ziva is hyper active child,so she used to ask lot of question to Dhoni while playing with him.
One fine evening Dhoni and Ziva were palying in Chepak Stadium in Chennai,at that time ziva looking at the Moon in sky asked Dhoni what is the gravity in moon? Dhoni said it's 16.6 percentage that of earth.
Ziva didn't got satisfied with that then she asked what will be my weight in moon?
Dhoni was little bit confused to answer ziva !!!!!
Can you help Dhoni to answer the question by creating a logic which calculates the weight of the person in moon so that Ziva will be happy knowing her weight.
Input Format:
Get the actual weight of the person
Output Format:
Print the weight in moon.
Refer Sample Testcases.

Source Code

```
#include <iostream>
using namespace std;
int main() {
 double weight;
   cin >> weight;
   cout <<"Your weight on moon is : " << weight * 0.166 << endl;
 return 0;
}
```

Sample Input

17

Sample Output

Your weight on moon is : 2.822

Result

Thus, Program " **Dhoni and Ziva in Chennai** " has been successfully executed

Course: OOPS **Session:** I/O Operations **Timestamp:** 2020-8-13 19:07:12 **Register Number:** RA1911026010033

Q. Play with XOR

Janani has written N binary integers (i.e. either zero or one) on a blackboard. She recently learned about XOR operation. Now she wants to erase exactly one integer in the array so that the XOR of the remaining N - 1 numbers is zero. Please help her to calculate the number of ways of doing so.

Input Format:

The first line of the input contains an integer T denoting the number of test cases. The description of T test cases follows.

The first line of each test case contains a single integer N denoting the number of numbers that Janani has written on a blackboard.

The second line contains N space-separated integers A1, A2, ..., AN denoting the numbers she had written.

Output Format:

For each test case, output a single line containing the number of ways to erase exactly one integer so that the XOR of the remaining integers is zero. The ways where you erase the same integer but on different places in the given sequence are considered different.

Constraints:

1 â%¤ T â%¤ 20
2 â%¤ N â‰¤ 10 power 5
0 â‰¤ A subscript i â‰¤ 1

Refer Sample Test Cases

Source Code

```
#include <iostream>
#include<bits/stdc++.h>
using namespace std;
int main() {
 int t;
   cin >> t;
   while(t--){
     int size;
       cin >> size;
       map<int,int> data;
       for(int i = 0; i < size; i++){
         int a;
           cin >> a;
           data[a]++;
       }
       if(data[1] % 2 != 0){
         cout << data[1] << endl;
       }else{
        cout << data[0] << endl;
       }
   }
 return 0;
}
```

Sample Input

```
2
5
1 0 0 0 0
5
1 1 1 1 1
```

Sample Output

```
1
5
```

Result

Thus, Program " **Play with XOR** " has been successfully executed

Course: OOPS **Session:** I/O Operations **Timestamp:** 2020-8-13 19:08:16 **Register Number:** RA1911026010033

Q. Letter Pattern

Jammy is the trainer in Secondary school, he has given the task of printing the letter pattern.
Students has to create a logic which get the integer number which specify the number of rows and according to that students has to print the letter pattern
Refer Sample testcases

Source Code

```
#include <iostream>
#include<bits/stdc++.h>
using namespace std;
int main() {
 int number;
   cin >> number;
   int ascii= 'A';
   for(int i = 1; i <= number; i++){
     for(int j = 0; j < i; j++){
        if(ascii <= 90){
           cout << (char)ascii;
             ascii++;
          }else{
           ascii = 65;
     cout << (char)ascii;
             ascii++;
          }
       }
      cout << endl;
   }
 return 0;
}
```

Sample Input

7

Sample Output

```
A
BC
DEF
GHIJ
KLMNO
PQRSTU
VWXYZAB
```

Result

Thus, Program " **Letter Pattern** " has been successfully executed

Course: OOPS **Session:** I/O Operations **Timestamp:** 2020-8-13 19:08:43 **Register Number:** RA1911026010033

Q. Print Floyd's

Create a logic to print Floyd's triangle upto the given n rows.
Refer Sample Test Cases.

Source Code

```
#include <iostream>
using namespace std;
int main() {
 int number;
   cin >> number;
   int count = 1;
   for(int i = 1; i <= number; i++){
     for(int j = 0; j < i; j++){
         cout << count;
           count++;
       }
      cout << endl;
    }
 return 0;
}
```

Sample Input

```
5
```

Sample Output

```
1
23
456
78910
1112131415
```

Result

Thus, Program " **Print Floyd's** " has been successfully executed

Course: OOPS **Session:** I/O Operations **Timestamp:** 2020-8-13 19:08:56 **Register Number:** RA1911026010033

Q. Professor Omkar

Omkar is the Professor in SRM he has decided to give a simple task to his students.
He asked his students to create a logic for automatically calculating the amount of energy needed to head X amount of water from Y initial temperature to Z final temperature.
The formula to compute the energy is as follows
Q = M * (finalTemperature â€“ initialTemperature) * 4184
Where,
M is the weight of water in kilograms,
Q is the energy measured in joules,
and
Temperatures are in degree Celsius.
Input Format:
Get the input of amount of water in kilograms , initial temperature of water and final temperature of the water.
Output Format:
Print the energy needed to heat the water.
Refer Sample Testcases

Source Code

```
#include <iostream>
using namespace std;
int main() {
 float m,finalTemp,initialTemp;
   cin >> m >> initialTemp >> finalTemp;
     float q =m * (finalTemp - initialTemp) * 4184;
   cout<< "The energy needed is " << q;
 return 0;
}
```

Sample Input

567 12 56

Sample Output

The energy needed is 1.04382e+08

Result

Thus, Program " **Professor Omkar** " has been successfully executed

Course: OOPS **Session:** I/O Operations **Timestamp:** 2020-8-13 19:04:56 **Register Number:** RA1911026010033

Q. Scientist Game

Armstrong was one of the great scientist.
The Indian council decided that we need to assign some number as a gift to the great scientist.
There was a suggestion given by the Indian Council. If the sum of cube of each number is again equal to the number then they decided that they can assign the number to the great scientist.
Kindly help the Indian Council to complete the task by writing a simple logic.
Refer sample Inputs and Outputs.
Input 1: 153
Output: Give to Scientist Armstrong
Reason((1*1*1 + 5*5*5 +3*3*3=153) which is equal to the number)
Input 2: 134
Output: Don't Give to Scientist Armstrong
Reason((1*1*1 + 5*5*5 +2*2*2=134) which is not equal to the number)
Refer Sample Test Cases.

Source Code

```
#include <iostream>
#include<bits/stdc++.h>
using namespace std;
int main() {
 int number;
   cin >> number;
   int sum = 0,answer = number;
   while(number != 0){
       int a = number % 10;
     sum += pow(a,3);
       number /= 10;
    }
   if(sum == answer){
     cout << "Give to Scientist Armstrong\n";
    }else{
     cout << "Dont Give to Scientist Armstrong\n";
    }
 return 0;
}
```

Sample Input

371

Sample Output

Give to Scientist Armstrong

Result

Thus, Program " **Scientist Game** " has been successfully executed