



***BUBT Intra-University
Programming Contest, Half yearly 2022
(Junior Division)***

Organized By:
Dept. of CSE, BUBT



A. Double it up

Input: Standard Input, **Output:** Standard Output

Time Limit: 1 second(s)

Memory Limit: 512 megabytes

Problem Statement:

You have N oranges in a bucket. There is a button in the bucket that doubles up the number of oranges. How many oranges will there be if you push the button **just once**?

Input:

You will be given just an integer $N(0 \leq N \leq 500)$.

Output:

Print the **number of oranges** in that bucket after you push the button once.

Sample Input/Output:

Sample 1:

Sample Input	Sample Output
4	8

Problem Setter: Md. Abu Quwsar Ohi, Lecturer, Dept. of CSE, BUBT

B. Student's Score

Input: Standard Input, **Output:** Standard Output

Time Limit: 1 second(s)

Memory Limit: 512 megabytes

Problem Statement:

A student has to obtain at least **45** marks to pass a course. You are given a student's scores of Mid exam, Final exam and Class assessment. Can you tell me if the student has passed the course or not ?

Input:

You are given three integers, **M**, **F** and **C**, where M is the score of Mid exam, F is the score of Final exam and C is the score at Class assessment. ($0 \leq M \leq 30$), ($0 \leq F \leq 40$), ($0 \leq C \leq 30$)

Output:

If the student has passed the exam, print "**Passed**", otherwise print "**Not Passed**", without the quotes.

Sample Input/Output:

Sample 1:

Sample Input	Sample Output
30 40 30	Passed

Sample 2:

Sample Input	Sample Output
8 10 20	Not Passed

Problem Setter: Md. Saifur Rahman, Assistant Professor & Chairman(Acting), Dept. of CSE, BUBT

C. Shooting tiles

Input: Standard Input, **Output:** Standard Output

Time Limit: 1 second(s)

Memory Limit: 512 megabytes

Problem Statement:

There are N tiles that you have to shoot. The tiles are numbered **sequentially**, that means,

if the 1st tile has the number 4,

the 2nd tile will have 5 and

the 3rd tile will have 6 and so on.

You are told the first tile has the number A .

If you shoot a tile, the number written on the tile is added to your point. If you have **0 points** before starting, what will be your total point after shooting N tiles ?

You can shoot a tile only once.

Input:

First line gives an integer T , denoting the number of test cases. ($1 \leq T \leq 1000$)

In each test case, you are given two positive integers, N and A . Where N is the number of tiles, and A is the number written on the first tile. Here, $1 \leq N \leq 1000$ and $1 \leq A \leq 100$.

Output:

For each test case, print the **total point** you get after shooting the N tiles.

Sample Input/Output:

Sample Input	Sample Output
3 42	14
52	20
73	42

2
3
A
5

Problem Setter: Jahin Hossain, Intake 41, Department of CSE, BUBT

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D. Pair Pair

Input: Standard Input, **Output:** Standard Output

Time Limit: 1 second(s)

Memory Limit: 512 megabytes

Problem Statement:

One day, Mohsin Kabir Sir came to the class and gave you a task. He gave you an array **A** containing $2 \cdot N$ integers that may contain **multiple equal** values. Determine whether you can divide the array into exactly **N** pairs, so that the sum of the two elements of each pair is **odd**. Each element should only be in one pair.

Input:

The first line gives an integer **T**, denoting the number of test cases.

In the first line of each test case, you are given an integer **N**.

Next line gives an array **A** containing $2 \cdot N$ space separated integers.

Constrains:

$$1 \leq T \leq 100$$

$$1 \leq S_i \leq 100$$

Output:

Print the test case number in this format "Test case T :", where T is the number of test cases. Then print "Yes" if it is possible, otherwise print "No".

Sample Input/Output:

Sample Input	Sample Output
4	Test case 1: Yes
2	Test case 2: No
2 3 4 5	Test case 3: Yes
3	Test case 4: No
2 3 4 5 5 5	
1	
2 3	
4	
1 5 3 2 6 7 3 4	

Problem Setter: Maruf Billah, Intake 41, Department of CSE, BUBT

E. Weird Officer

Input: Standard Input, **Output:** Standard Output

Time Limit: 1 second(s)

Memory Limit: 512 megabytes

Problem Statement:

Our Abu Quwsar Ohi Sir is departing our country after receiving a scholarship for higher education. At the airport, an immigration official questioned Abu Quwsar Ohi sir is,

You're given a positive integer M , find the largest integer X such that $2^X \leq M$. He challenged you to solve the problem.

Input:

You are given an integer M . Here, M is an integer satisfying $1 \leq M \leq 10^{18}$

Output:

Print the answer to the problem.

Sample Input/Output:

Sample 1:

Sample Input	Sample Output
6	2

Sample 2:

Sample Input	Sample Output
1	0

Problem Setter: Habibullah, Intake 41, Department of CSE, BUBT