A: Even Odd

Time limit: 0.5 sec, Memory Limit: 2 MB

Do you know about even and odd numbers? An even number is a number which is divisible by 2 and have no remainder. And an odd number is a number which is not divisible by 2 and have remainder. Now you already know about binary numbers. If you are given a binary can you find if the binary number is even or odd. To find out you should convert the given binary number to its decimal equivalent and check it if it is even or odd.

Now your task is simple that write a program that check if a given binary number is even or odd.

Input:

Input starts with an integer T (≤ 100), denoting the number of test cases.

Then each cases contains a binary number N. Maximum bits of the given binary number will be at most 100.

Output:

For each case, you have to print Case #: "EVEN" or "ODD" (without quotes), here # is the case number and "EVEN" (without quotes) if N is even or "ODD" (without quotes) if N is odd. See sample input output for better understanding.

Sample Inputs:	**Sample Outputs:**
2 1111 10	Case 1: ODD Case 2: EVEN

Problem Setter:
Md. Gulzar Hussain

B: Binary Addition

Time Limit: 1 sec

Problem

Binary number consist of sequence 1 or 0. Addition of two binary numbers is the simplest addition of digit by digit of those two binary numbers. 0+0=0, 0+1=1, 1+1=10, 1+1+1=11, and so on.

Input

Input will consist of several test cases. Each input consists of an integer T, denoting test cases. The next T lines consist of two binary numbers X and Y. **Both X and Y can be greater 2^{32}.** (Use string to input)

Output

Output consists of a single line with of Case #, where # is the test case number and prints the addition result.

Input	Output
3 1 1 1 11 111 11	Case 1: 10 Case 2: 100 Case 3: 1010

Problem Setter:

Misbah Ul Hoque
Senior Lecturer
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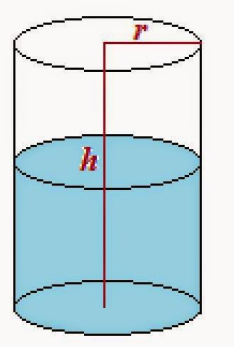
C: Water In A Glass

Time limit: 2 sec, Memory Limit: 2 MB



Mina is very health conscious. She found that to stay healthy a human should drink 2 liter water a day. One day morning she started to count how many glasses of water she drinks till night. But now she can't calculate how much water she drunk as she is weak in math. So she came to you to help her to write a program to find how much water she drinks every day.

Input:

Input starts with an integer T (≤ 100), denoting the number of test cases.

Then each contains three positive numbers R radius of the glass in cm, H height of the glass in cm, and C is the number of glasses of water Mina drinks. Here (1<=R, H<=10000000 and 1<=C<=25).

Output:

For each case, you have to print Case #: V liters, here # is the case number and V (up to 4 decimal value) is how much water Mina drinks every day in liters. See sample input output for better understanding. (1 cubic cm = 0.0001 liters)

Sample Inputs:	Sample Outputs:
2 1 1 1 100 100 25	Case 1: 0.0031 liters Case 2: 78539.8163 liters

Problem Setter:
Md. Gulzar Hussain

D: Leap Year Between Year Range

Time limit: 2 sec, Memory Limit: 2 MB

Do you know about leap year? The year with 29 days in February month is a leap year.

Input:

The first line contain an integer T (1<= T <= 50) indicates that number of test Cases. For every test cases will be given two year range containing a space.

Output:

You have to print the number of Leap Year between two given year excluded given two. If no Leap Year between them then just print: “There is no Leap Year between the year range.”

Sample Inputs:	**Sample Outputs:**
2 2000 2020 1900 1950	Case 1: 4 Case 2: 12

Problem Setter:
Md. Abdullah Saleh
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E: Think Binary

Time limit: 2 sec, Memory Limit: 2 MB

Professor Boolando can only think in binary, or more specifically, in powers of 2. He converts any number you give him to the smallest power of 2 that is equal to or greater than your number. For example, if you give him 5, he converts it to 8; if you give him 100, he converts it to 128; if you give him 512, he converts it to 512.

Given an integer, your program should binarize it.

Input:

The first input line contains a positive integer, n, indicating the number of values to binarize. The values are on the following n input lines, one per line. Each input will contain an integer between 2 and 100,000 (inclusive).

Output:

At the beginning of each test case, output "Input value: v" where v is the input value. Then, on the next output line, print the binarized version. Leave a blank line after the output for each test case.

Sample Inputs:	**Sample Outputs:**
3 900 16 4000	 Input value: 900 1024 Input value: 16 16 Input value: 4000 4096

Problem Setter:
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F: Wrap Chocolates

Time limit: 1 sec, Memory Limit: 2 MB

You know Cadbury is famous for its Dairy Milk chocolate. They produce many chocolate bars daily and wrap them. But they are now facing a problem. They can't calculate how big the wrapping paper they need every day. Now they hire you to calculate the area of the needed wrapping paper. Consider they will not waste any area of the wrapping paper.

Input:

Input starts with an integer T (≤ 100), denoting the number of test cases.

Then each contains three positive numbers L length of the chocolate in cm, W width of the chocolate in cm, H height of the chocolate in cm. And N, number of the chocolates they produce every day. Here (1<=L, W, H, N <=10000000).

Output:

For each case, you have to print Case #: A Square Centimeters, here # is the case number and A (up to 2 decimal value) is the area of the needed wrapping paper every day. See sample input output for better understanding.

Sample Inputs:	**Sample Outputs:**
3 1 1 1 1 100 100 100 100 25.5 15.9 2.7 10	Case 1: 6.00 Square Centimeters Case 2: 6000000.00 Square Centimeters Case 3: 10344.60 Square Centimeters

Problem Setter:
Md. Gulzar Hussain