Onsite Contest 2k16

A. Borgo in a Britto

Language : C/C++/Java

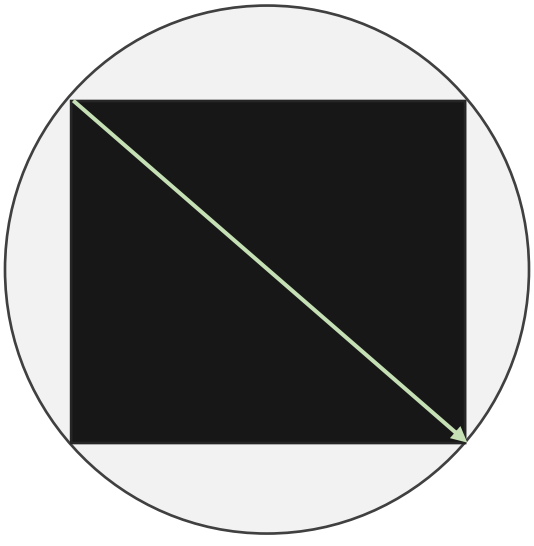
Points : 60

Timelimit : 1s

Memory Limit : 64 MB

Description

Mr. Aziz is a rich man. He is well-known for his peculiar house. Once you wished to visit his house. It is not so far from your house but the fact is the compound of his house is circular. The more interesting fact is the house has the shape of a square field. For clarification, see the structure below.



The summary of Mr. Aziz's house is, he made a narrow path in his house. Through this path, he can easily pass the diagonal of his square-shaped house. Now seeing this strange thing , his friend, Mr. Ali also wished to build a house like that. For the construction of this house, the length of the diagonal should be known first. Then from geometry, Mr. Aziz build his house. But now he come to you knowing that you are very good at mathematics and a little bit passionate about programming.

Oww, there are more to explain, Mr. Ali loves planting. So, the compound should have an extra area to plant herbs.

Given the length of the diagonal (in metres) of Mr. Aziz's square-shaped house, you are to determine the area of the compound of Mr. Aziz's house, the area of the Mr.Aziz's house(black shaded) and the rest of the area(white shaded) where Mr. Ali can plant herbs.

Input

Input starts with a single integer t (t < 1000), denoting the number of test cases. Next t lines contain a floating point number n, denoting the length of the diagonal of Mr. Aziz's house. It is noted that n should be measured in metres and can have the value upto 10000. Input should be terminated by the End of file.

Output

The output should be the same as stated above in the description. Print the case number first. Then, for each value, you should print four digits after decimal point. Each value must be separated by a blank space. Do not forget to print a blank line after each test case, otherwise you will get (PE – Presentation Error) verdict.

Note: Pi is considered to be arccos(-1).

Sample Input

5

34.25

47. 21

60.00

9999.71

134.52

Sample Output

Case 1 : 921.3211 586.5312 334.7899

Case 2 : 1750.4829 1114.3921 636.0909

Case 3 : 2827.4334 1800.0000 1027.4334

Case 4 : 78535261.0964 49997100.0420 28538161.0544

Case 5: 14212.2749 9047.8152 5164.4597

B. Jog Biyog Gun Bhag

Language : C/C++/Java Points : 50

Timelimit : 1s

Memory Limit : 64 MB

Description

In your childhood, you learnt how to add, subtract, multiply or divide any two integers. In this problem, you are to do the same thing.

Given the name of any of the above operations, you should perform the exact operation and print the output.

Input

Input starts with a single integer t (t < 101), denoting the number of test cases. Each test case starts with an integer n (n < 11) and a name of any of the above operations ("ADD", "SUBTRACT", "MULTIPLY" or "DIVISION"). Then in n lines, input two integers, a and b. (0 < a, b < 100)

Input is terminated when t = 0.

Output

For each operation, print the sum, difference, product or quotient as well. And do not forget to print the case number. It is needed.

Note : '0' can not be a ideal divisor. So if you face this problem, print "Impossible" instead of the quotient.

Sample Input

4

4 ADD

6 7

67 3

100 200

50 50

3 SUBTRACT

6 1

8 100

2 2

2 MULTIPLY

56 2

3 111

1 DIVISION

5 3

0

Sample Output

Case 1 : 13 70 300 100

Case 2 : 5 -92 0

Case 3 : 112 222

Case 4 : 1.67

C. Bor-kone

Language : C/C++/Java Points : 70

Timelimit : 1s

Memory Limit : 64 MB

Description

Our Babul bhai completed his B.Sc. Recently he has got a new job. So, now he is searching for a beautiful and clever girl to marry. He knows that respecting each other's opinion is one of the pre-requisites of a happy married life. Therefore, he wants to marry such a lady who has some similarities with Babul bhai when taking any major decision.

Input

Input starts with a single integer t (t < 11). Next t lines, there will be a string indicating the subject of any opinion. After inputting a subject, input two new strings. These mean the opinions of Babul bhai and her wife respectively.

Ohhh!!! one more thing, do not forget to seperate two opinions by a comma (,).

Output

Print "Matched!!! :D" if major numbers of the opinions are matched, otherwise print "Nope!!! :-(".

Note : Subjects of opinions can be, “FOOD”, “COLOUR”, “BOOKS”, “AUTHOR”, “NOVEL”, “MOVIE”, “SONG”, “FLOWER”, “FRUIT” and “GAME”.

Sample Input

5

FOOD

Biriyani , Biriyani

COLOUR

Black , Red

BOOKS

Devdas , Guerilla

AUTHOR

H.Ahmed , H.Ahmed

GAME

Cricket , Cricket

Sample Output

Matched!!! :D

D. Sorted Average

Language : C/C++/Java Points : 50

Timelimit : 1s

Memory Limit : 64 MB

Description

Sorting is an important part of Computer Programming. By sorting, we can order a series of numbers ascendingly or descendingly.

Your task is simple. Given a series of different numbers, you are to determine the average of the intermediate number and it previous and next ones.

Input

Input starts with a single integer n (n < 10001). Then n numbers will be inputted. Every number does not exceed 1000. Input will terminated when n being even.

Output

For each series, print the average as stated above in the description. Print 4 digits after decimal point.

Sample Input

5 6 7 11 3 -5

8

Sample Output

5.3333

E. Gotibidya

Language : C/C++/Java Points : 40

Timelimit : 1s

Memory Limit : 64 MB

Description

You studied some formulas of motion in high school. Can you remember these right now?

Given the values of acceleration (rate of change of non-uniform velocity) and displacement of a particle, you must determine the value of final velocity after a certain time t, when its initial velocity is always zero.

Input

Input starts with two integers a and d, denoting the value of acceleration and displacement respectively ($a < 0$, $d < 0$, $a < 500$, $b < 1000$). Input will terminated by the End of file. Again, Input can be terminated when a is negative or zero, or d is zero, or both are zero.

So, be cautious !!! You must take care about both of them.

Output

For each case, print the value of final velocity, with 2 digits after the decimal point.

Sample Input

10 5

0 0

Sample Output

10.00

F. Odd Sum

Language : C/C++/Java Points : 40

Timelimit : 1s

Memory Limit : 64 MB

Description

Sobahan is a great programmer. He solved many basic problems and implemented them in a great way. So one day his little brother, Shishir, came to him to solve a problem. It is not a hard task to calculate the sum of the numbers 1 to n inclusively. But Shishir was too much excited to make his brother tensed about thinking a new program having some similarities like that. In the problem, given two integers a and b, Shishir wanted to determine the sum of odd numbers between a and b, inclusively. So, he is now in a new challenge to check if his elder brother, Sobahan, can solve the problem or not.

Input

Input starts with two integers a and b ($a,b > 0$, $a,b < 10^{15}$) and will be terminated by the End of file.

Output

Output should be the same as stated in the description.

Sample Input

1 10

2 20

11 30

Sample Output

Case 1 : 25

Case 2 : 99

Case 3 : 200