



NENU Spring Training 2014 #1 div2

Start Time : 2014-03-01 12:00:00 End Time : 2014-03-01 17:00:00

Contest Status : **Running**

Current System Time : 2014-03-01 12:13:33

Solved	Problem ID	Title	Ratio(Accepted / Submitted)
	1001	A+B Problem	21.74%(5/23)
	1002	Just like A+B	0.00%(0/6)
	1003	超级楼梯	0.00%(0/0)
	1004	Farewell my princess	0.00%(0/0)
	1005	Happy Candles!	0.00%(0/0)
	1006	Knight Moves	0.00%(0/0)
	1007	DNA?	0.00%(0/0)
	1008	Numbers	0.00%(0/0)
	1009	Prime Cuts	0.00%(0/0)
	1010	Boys and girls	0.00%(0/0)

A+B Problem

Time Limit : 3000/1000ms (Java/Other) Memory Limit : 65535/32768K (Java/Other)

Total Submission(s) : 24 Accepted Submission(s) : 5

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Problem Description

Calculate a+b

Input

Two integer a,b (0<=a,b<=10000)

Output

Output a+b

Sample Input

1 2

Sample Output

3

Author

Lee_vincent

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Just like A+B

Time Limit : 3000/1000ms (Java/Other) Memory Limit : 65535/32768K (Java/Other)

Total Submission(s) : 8 Accepted Submission(s) : 0

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Problem Description

Give you two integer A and B.

Exchange their last digit.

Then print A+B.

For example if you get A = 13 and B = 24

after exchanged their last digit.

you get A = 14 and B = 23

so you should print 37

Input

There are several test cases in the input.Process to end of file.
Each line contains two integers A and B. $-2^{24} < A, B < 2^{24}$.

Output

For each case. Print the answer in one line.

Sample Input

1 1
10 11

Sample Output

2
21

Author

Lee_vincent

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超级楼梯

Time Limit : 3000/1000ms (Java/Other) Memory Limit : 65535/32768K (Java/Other)
Total Submission(s) : 1 Accepted Submission(s) : 1
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Problem Description

有一楼梯共M级，刚开始时你在第一级，若每次只能跨上一级或二级，要走上第M级，共有多少种走法？

Input

输入数据首先包含一个整数N，表示测试实例的个数，然后是N行数据，每行包含一个整数M（ $1 \leq M \leq 40$ ），表示楼梯的级数。

Output

对于每个测试实例，请输出不同走法的数量

Sample Input

2
2
3

Sample Output

1
2

Author

Lee_vincent

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Farewell my princess

Time Limit : 3000/1000ms (Java/Other) Memory Limit : 65535/32768K (Java/Other)
Total Submission(s) : 0 Accepted Submission(s) : 0
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Problem Description

Fleeting time does not blur my memory of you. Can it really be 4 years since I first saw you? I still remember, vividly, on the beautiful Hangzhou Campus, 4 years ago, from the moment I saw you smile, as you were walking out of the classroom and turned your head back, with the soft sunset glow shining on your rosy cheek, I knew, I knew that I was already drunk on you. Then, after several months’ observation and prying, your grace and your wisdom, your attitude to life and your aspiration for future were all strongly impressed on my memory. You were the glamorous and sunny girl whom I always dream of to share the rest of my life with. Alas, actually you were far beyond my wildest dreams and I had no idea about how to bridge that gulf between you and me. So I schemed nothing but to wait, to wait for an appropriate opportunity. Till now — the arrival of graduation, I realize I am such an idiot that one should create the opportunity and seize it instead of just waiting.

These days, having parted with friends, roommates and classmates one after another, I still cannot believe the fact that after waving hands, these familiar faces will soon vanish from our life and become no more than a memory. I will move out from school tomorrow. And you are planning to fly far far away, to pursue your future and fulfill your dreams. Perhaps we will not meet each other any more if without fate and luck. So tonight, I was wandering around your dormitory building hoping to meet you there by chance. But contradictorily, your appearance must quicken my heartbeat and my clumsy tongue might be not able to belch out a word. I cannot

remember how many times I have passed your dormitory building both in Hangzhou and Zhejiang, and each time aspired to see you appear in the balcony or your silhouette that cast on the window. I cannot remember how many times this idea comes to my mind: call her out to have dinner or at least a conversation. But each time, thinking of your excellence and my commonness, the predominance of timidity over courage drove me leave silently.

Graduation, means the end of life in Senior middle, the end of these glorious, romantic years. Your lovely smile which is my original incentive to work hard and this unrequited love will be both sealed as a memory in the deep of my heart and my mind. Graduation, also means a start of new life, a footprint on the way to bright prospect. I truly hope you will be happy everyday abroad and everything goes well. Meanwhile, I will try to get out from puerility and become more sophisticated. To pursue my own love and happiness here in reality will be my ideal I never desert.

Farewell, my princess!

If someday, somewhere, we have a chance to gather, even as gray-haired man and woman, at that time, I hope we can be good friends to share this memory proudly to relight the youthful and joyful emotions. If this chance never comes, I wish I were the stars in the sky and twinkling in your window, to bless you far away, as friends, to accompany you every night, sharing the sweet dreams or going through the nightmares together.

Here comes the problem: Assume the sky is a flat plane. There are two stars. Your task is to tell me the distance between the two stars.

Input

There are several test cases in the input. Process to end of file. Each line contains 4 integers: telling the location (x1, y1) and (x2, y2), No two stars are on the same point.
 $0 \leq x1, x2, y1, y2 < 2^{31}$.

Output

For each data set, print one line containing the distance between the two stars, printed to three decimal places of precision.

Sample Input

```
1 2 1 3
2 2 3 2
```

Sample Output

```
1.000
1.000
```

Author

Lee_vincent

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Happy Candles!

Time Limit : 13000/500ms (Java/Other) Memory Limit : 65535/32768K (Java/Other)

Total Submission(s) : 0 Accepted Submission(s) : 0

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Problem Description

Vincent the Programmer loves romance, so this year he decided to illuminate his room with candles.

Vincent has a candles. When Vincent lights up a new candle, it first burns for an hour and then it goes out. Vincent is smart, so he can make b went out candles into a new candle. As a result, this new candle can be used like any other new candle.

Now Vincent wonders: for how many hours can his candles light up the room if he acts optimally well? Help him find this number.

Input

There are several test cases in the input. Process to end of file.
 Each line contains two integers, a and b ($1 \leq a \leq 1000; 2 \leq b \leq 1000$)

Output

For each case. Print a single integer — the number of hours Vincent can light up the room for.

Sample Input

```
4 2
6 3
```

Sample Output

```
7
8
```

Author

Lee_vincent

Knight Moves

Time Limit : 3000/1000ms (Java/Other) Memory Limit : 65535/32768K (Java/Other)

Total Submission(s) : 0 Accepted Submission(s) : 0

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Problem Description

One day xiao_kang and xiao_chen is doing research on the Traveling Knight Problem (TKP) where you are to find the shortest closed tour of knight moves that visits each square of a given set of n squares on a chessboard exactly once. They think that the most difficult part of the problem is determining the smallest number of knight moves between two given squares and that, once you have accomplished this, finding the tour would be easy.

Of course you know that it is vice versa. So you offer them to write a program that solves the "difficult" part.

Input

The input will contain one or more test cases. Each test case consists of one line containing two squares separated by one space. A square is a string consisting of a letter (a-h) representing the column and a digit (1-8) representing the row on the chessboard.

Output

For each test case, print one line saying "To get from xx to yy takes n knight moves.".

Sample Input

```
e2 e4
a1 b2
b2 c3
a1 h8
```

Sample Output

```
To get from e2 to e4 takes 2 knight moves.
To get from a1 to b2 takes 4 knight moves.
To get from b2 to c3 takes 2 knight moves.
To get from a1 to h8 takes 6 knight moves.
```

Author

Lee_vincent

DNA?

Time Limit : 3000/1000ms (Java/Other) Memory Limit : 65535/32768K (Java/Other)

Total Submission(s) : 0 Accepted Submission(s) : 0

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Problem Description

Miss Ice is designing the genetic code for a new type of algae to efficiently produce fuel. Specifically, Miss Ice is focusing on a stretch of DNA that encodes one protein. The stretch of DNA is represented by a string containing only the characters 'A', 'T', 'G' and 'C'.

Miss Ice has determined that if the stretch of DNA contains a maximal sequence of consecutive identical nucleotides that is of even length, then the protein will be nonfunctional. For example, consider a protein described by DNA string "GTAAAG". It contains four maximal sequences of consecutive identical nucleotides: "G", "TT", "AAA", and "G". The protein is nonfunctional because sequence "TT" has even length.

Miss Ice is trying to obtain a functional protein from the protein she currently has. Miss Ice can insert additional nucleotides into the DNA stretch. Each additional nucleotide is a character from the set {'A', 'T', 'G', 'C'}. Miss Ice wants to determine the minimum number of insertions necessary to make the DNA encode a functional protein.

Input

There are several test cases in the input. Process to end of file.

Each line contains containing a string s of length n ($1 \leq n \leq 100$). Each character of s will be from the set {'A', 'T', 'G', 'C'}.

Output

The program should print on one line a single integer representing the minimum number of 'A', 'T', 'G', 'C' characters that are required to be inserted into the input string in order to make all runs of identical characters have odd length.

Sample Input

```
GTAAAG
AACCAACCAAAAC
```

Sample Output

```
1
```

Author

Lee_vincent

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Numbers

Time Limit : 13000/200ms (Java/Other) Memory Limit : 65535/32768K (Java/Other)**Total Submission(s) : 0 Accepted Submission(s) : 0**

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Problem Description

While skimming his phone directory in 1982, Albert Wilansky, a mathematician of Lehigh University, noticed that the telephone number of his brother-in-law H. Smith had the following peculiar property: The sum of the digits of that number was equal to the sum of the digits of the prime factors of that number. Got it? Smith's telephone number was 493-7775. This number can be written as the product of its prime factors in the following way:
 $4937775 = 3 \times 5 \times 5 \times 65837$

The sum of all digits of the telephone number is $4+9+3+7+7+7+5 = 42$, and the sum of the digits of its prime factors is equally $3+5+5+6+5+8+3+7 = 42$. Wilansky was so amazed by his discovery that he named this kind of numbers after his brother-in-law: Smith numbers.

As this observation is also true for every prime number, Wilansky decided later that a (simple and unsophisticated) prime number is not worth being a Smith number, so he excluded them from the definition.

Wilansky published an article about Smith numbers in the Two Year College Mathematics Journal and was able to present a whole collection of different Smith numbers: For example, 9985 is a Smith number and so is 6036. However, Wilansky was not able to find a Smith number that was larger than the telephone number of his brother-in-law. It is your task to find Smith numbers that are larger than 4937775!

Input

The input file consists of a sequence of positive integers, one integer per line. Each integer will have at most 8 digits. The input is terminated by a line containing the number 0.

Output

For every number $n > 0$ in the input, you are to compute the smallest Smith number which is larger than n , and print it on a line by itself. You can assume that such a number exists.

Sample Input

```
4937774
0
```

Sample Output

```
4937775
```

Author

Lee_vincent

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Prime Cuts

Time Limit : 3000/1000ms (Java/Other) Memory Limit : 65535/32768K (Java/Other)**Total Submission(s) : 0 Accepted Submission(s) : 0**

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Problem Description

A prime number is a counting number (1, 2, 3, ...) that is evenly divisible only by 1 and itself. In this problem you are to write a program that will cut some number of prime numbers from the list of prime numbers between (and including) 1 and N . Your program will read in a number N ; determine the list of prime numbers between 1 and N ; and print the $C \times 2$ prime numbers from the center of the list if there are an even number of prime numbers or $(C \times 2) - 1$ prime numbers from the center of the list if there are an odd number of prime numbers in the list.

Input

Each input set will be on a line by itself and will consist of 2 numbers. The first number ($1 \leq N \leq 1000$) is the maximum number in the complete list of prime numbers between 1 and N . The second number ($1 \leq C \leq N$) defines the $C \times 2$ prime numbers to be printed from the center of the list if the length of the list is even; or the $(C \times 2) - 1$ numbers to be printed from the center of the list if the length of the list is odd.

Output

For each input set, you should print the number N beginning in column 1 followed by a space, then by the number C , then by a colon (:), and then by the center numbers from the list of prime numbers as defined above. If the size of the center list exceeds the limits of

the list of prime numbers between 1 and N, the list of prime numbers between 1 and N (inclusive) should be printed. Each number from the center of the list should be preceded by exactly one blank. Each line of output should be followed by a blank line. Hence, your output should follow the exact format shown in the sample output

Sample Input

```
21 2
18 2
18 18
100 7
```

Sample Output

```
21 2: 5 7 11

18 2: 3 5 7 11

18 18: 1 2 3 5 7 11 13 17

100 7: 13 17 19 23 29 31 37 41 43 47 53 59 61 67
```

Author

Lee_vincent

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Boys and girls

Time Limit : 3000/1000ms (Java/Other) Memory Limit : 65535/32768K (Java/Other)

Total Submission(s) : 0 Accepted Submission(s) : 0

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Problem Description

There are n schoolchildren, boys and girls, lined up in the school canteen in front of the bun stall. The buns aren't ready yet and the line is undergoing some changes.

Each second all boys that stand right in front of girls, simultaneously swap places with the girls (so that the girls could go closer to the beginning of the line). In other words, if at some time the i-th position has a boy and the (i+1)-th position has a girl, then in a second, the i-th position will have a girl and the (i+1)-th one will have a boy.

Let's take an example of a line of four people: a boy, a boy, a girl, a girl (from the beginning to the end of the line). Next second the line will look like that: a boy, a girl, a boy, a girl. Next second it will be a girl, a boy, a girl, a boy. Next second it will be a girl, a girl, a boy, a boy. The line won't change any more.

Your task is: given the arrangement of the children in the line to determine the time needed to move all girls in front of boys (in the example above it takes 3 seconds). Baking buns takes a lot of time, so no one leaves the line until the line stops changing.

Input

There are several test cases in the input. Process to end of file.

Each line contains a sequence of letters without spaces $s_1s_2...s_n$ ($1 \leq n \leq 10^6$), consisting of capital English letters M and F. If letter s_i equals M, that means that initially, the line had a boy on the i-th position. If letter s_i equals F, then initially the line had a girl on the i-th position.

Output

For each case. Print a single integer — the number of seconds needed to move all the girls in the line in front of the boys. If the line has only boys or only girls, print 0.

Sample Input

```
MFM
MMFF
FFMMM
```

Sample Output

```
1
3
0
```

Author

Lee_vincent

Source

In the first test case the sequence of changes looks as follows: MFM → FMM. The second test sample corresponds to the sample from the statement. The sequence of changes is: MMFF → MFMF → FMFM → FFMM.

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