

## Light Online Judge

### Problem No. 1015

#### Brush (I)

Sometimes I feel angry to arrange contests, because I am too lazy. Today I am arranging a contest for AIUB students. So, I made a plan. While they will be busy with the contest, as a punishment I will cover their rooms with dusts. So, when they will be back, they will surely get angry, and it will cause them some pain. So, at first, I will make up my mind, that means I will fix the amount of dusts for each student. This amount may not be same for all. Now you are given the amount of dust unit for each student. You have to help me finding the total dust unit I have to collect to cause them pain. But there is a problem, my random function which generates dust units for students has a bug, it sometimes returns negative numbers. If a student gets negative number, I think he is lucky, so I will not cause him any pain with dusts.

#### Input

Input starts with an integer **T** ( $\leq 100$ ), denoting the number of test cases.

Each case starts with a blank line. The next line contains an integer **N** ( $1 \leq N \leq 1000$ ), means that there are **N** students. The next line will contain **N** integers separated by spaces which denote the dust unit for all students. The dust unit for any student will not contain more than two digits.

#### Output

For each case print the case number and the total required dust units.

#### Code

```
1  #include<stdio.h>
2  int main()
3  {
4      int T,i,j,N,dust[1010],sum=0;
5      scanf("%d",&T);
6      for (i = 1 ; i<=T ; i+=1) {
7          scanf("%d",&N);
8          for (j = 0 ; j<N ; j+=1) {
9              scanf("%d",&dust[j]);
10             if (dust[j] > 0)
11                 sum += dust[j];
12         }
13         printf("Case %d: %d\n",i,sum);
14         sum = 0;
15     }
16     return 0;
17 }
```

## Verdict

1091702	2017-10-29 19:25:06	1015 - Brush (I)	C	0.008	1088	Accepted
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## Analysis of Solution

Here the complexity of the above program is  $O(n^2)$ .

**No. of Problem solved** : 21

## Codeforces Online Judge

### Problem No. 124A

### The number of positions

Petr stands in line of  $n$  people, but he doesn't know exactly which position he occupies. He can say that there are no less than  $a$  people standing in front of him and no more than  $b$  people standing behind him. Find the number of different positions Petr can occupy.

## Input

The only line contains three integers  $n$ ,  $a$  and  $b$  ( $0 \leq a, b < n \leq 100$ ).

## Output

Print the single number — the number of the sought positions.

## Code

```
1  #include<stdio.h>
2  int main()
3  {
4      int i,n,a,b,count=0;
5      scanf("%d%d%d",&n,&a,&b);
6      int x = n - b;
7      for (i = 1 ; i<=n ; i++) {
8          if (i>a && i>=x)
9              count++;
10     }
11     printf("%d\n",count);
12     return 0;
13 }
```

## Verdict

<a href="#">31993247</a>	2017-11-03 00:25:26	akash_1603108	<a href="#">124A - The number of positions</a>	GNU C++14	Accepted	62 ms	0 KB
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## Analysis of Solution

Here the complexity of the above program is  $O(n)$ .

**No. of Problem solved : 22**

## Codeforces Online Judge

### Problem No. 734A

### Anton and Danik

Anton likes to play chess, and so does his friend Danik. Once they have played  $n$  games in a row. For each game it's known who was the winner — Anton or Danik. None of the games ended with a tie. Now Anton wonders, who won more games, he or Danik? Help him determine this.

## Input

The first line of the input contains a single integer  $n$  ( $1 \leq n \leq 100\,000$ ) — the number of games played. The second line contains a string  $s$ , consisting of  $n$  uppercase English letters 'A' and 'D' — the outcome of each of the games. The  $i$ -th character of the string is equal to 'A' if the Anton won the  $i$ -th game and 'D' if Danik won the  $i$ -th game.

## Output

If Anton won more games than Danik, print "Anton" (without quotes) in the only line of the output. If Danik won more games than Anton, print "Danik" (without quotes) in the only line of the output. If Anton and Danik won the same number of games, print "Friendship" (without quotes).

## Code

```
1  #include<iostream>
2  #include<string.h>
3  using namespace std;
4  int main()
5  {
6      long int n,i,ScoreAnton=0,ScoreDanik=0;
7      string game;
8      cin>>n;
9      cin>>game;
10     for (i=0 ; i<game.size() ; i++) {
11         if (game[i] == 'A')
12             ScoreAnton++;
13         else if (game[i] == 'D')
14             ScoreDanik++;
15     }
16     if (ScoreAnton>ScoreDanik)
17         cout<<"Anton\n"<<endl;
18     else if (ScoreAnton<ScoreDanik)
19         cout<<"Danik\n"<<endl;
20     else if (ScoreAnton==ScoreDanik)
21         cout<<"Friendship\n"<<endl;
22     return 0;
23 }
```

## Verdict

<a href="#">31993707</a>	2017-11-03 00:52:40	akash_1603108	<a href="#">734A - Anton and Danik</a>	GNU C++14	Accepted	31 ms	300 KB
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## Analysis of Solution

Here the complexity of the solution is  $O(n)$ .

**No. of problem solved** : 23

## Codeforces Online Judge

### Problem No. 750A

#### New Year and Hurry

Limak is going to participate in a contest on the last day of the 2016. The contest will start at 20:00 and will last four hours, exactly until midnight. There will be  $n$  problems, sorted by difficulty, i.e. problem 1 is the easiest and problem  $n$  is the hardest. Limak knows it will take him  $5 \cdot i$  minutes to solve the  $i$ -th problem. Limak's friends organize a New Year's Eve party and Limak wants to be there at midnight or earlier. He needs  $k$  minutes to get there from his house, where he will participate in the contest first. How many problems can Limak solve if he wants to make it to the party?

#### Input

The only line of the input contains two integers  $n$  and  $k$  ( $1 \leq n \leq 10$ ,  $1 \leq k \leq 240$ ) — the number of the problems in the contest and the number of minutes Limak needs to get to the party from his house.

#### Output

Print one integer, denoting the maximum possible number of problems Limak can solve so that he could get to the party at midnight or earlier.

#### Code

```
1  #include<iostream>
2  using namespace std;
3  int main()
4  {
5      int n,k,i,solved=0,rem_time,c_time=0;
6      cin>>n>>k;
7      rem_time = 240 - k;
8      for (i=0 ; i<n ; i++) {
9          c_time += 5*(i+1);
10         if (rem_time >= c_time)
11             solved++;
12     }
13     cout<<solved<<endl;
14     return 0;
15 }
```

## Verdict

<a href="#">31992648</a>	2017-11-02 23:52:16	akash_1603108	<a href="#">750A - New Year and Hurry</a>	GNU C++14	Accepted	15 ms	0 KB
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## Analysis of Solution

Here the complexity of the above program is  $O(n)$ .

**No. of problem solved** : 24

## Codeforces Online Judge

### Problem No. 755A

### PolandBall and Hypothesis

PolandBall is a young, clever Ball. He is interested in prime numbers. He has stated a following hypothesis: "There exists such a positive integer  $n$  that for each positive integer  $m$  number  $n \cdot m + 1$  is a prime number".

Unfortunately, PolandBall is not experienced yet and doesn't know that his hypothesis is incorrect. Could you prove it wrong? Write a program that finds a counterexample for any  $n$ .

## Input

The only number in the input is  $n$  ( $1 \leq n \leq 1000$ ) — number from the PolandBall's hypothesis.

## Output

Output such  $m$  that  $n \cdot m + 1$  is not a prime number. Your answer will be considered correct if you output any suitable  $m$  such that  $1 \leq m \leq 10^3$ . It is guaranteed the answer exists.

## Code

```
1  #include<iostream>
2  using namespace std;
3  int is_prime(int num)
4  {
5      if (num <= 1)
6          return 0;
7      if (num % 2 == 0 && num > 2)
8          return 0;
9      for(int i = 3; i < num / 2; i+= 2) {
10         if (num % i == 0)
11             return 0;
12     }
13     return 1;
14 }
15 int main()
16 {
17     int n,m,a;
18     cin>>n;
19     for (m=1 ; ; m++) {
20         a = n*m +1;
21         if (is_prime(a)==0)
22             break;
23     }
24     cout<<m<<endl;
25     return 0;
26 }
```

## Verdict

<a href="#">31984892</a>	2017-11-02 18:36:26	akash_1603108	<a href="#">755A - PolandBall and Hypothesis</a>	GNU C++14	Accepted	15 ms	0 KB
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## Analysis of Solution

Here the complexity of the program is  $O(n)$ .

**No. of problem solved** : 25

## Codeforces Online Judge

### Problem No. 723A

#### The New Year: Meeting Friends

There are three friend living on the straight line  $Ox$  in Lineland. The first friend lives at the point  $x_1$ , the second friend lives at the point  $x_2$ , and the third friend lives at the point  $x_3$ . They plan to celebrate the New Year together, so they need to meet at one point. What is the minimum total distance they have to travel in order to meet at some point and celebrate the New Year? It's guaranteed that the optimal answer is always integer.

#### Input

The first line of the input contains three distinct integers  $x_1$ ,  $x_2$  and  $x_3$  ( $1 \leq x_1, x_2, x_3 \leq 100$ ) — the coordinates of the houses of the first, the second and the third friends respectively.

#### Output

Print one integer — the minimum total distance the friends need to travel in order to meet together.

#### Code

```
1  #include<stdio.h>
2  #include<stdlib.h>
3  #include<math.h>
4  int main()
5  {
6      int x1,x2,x3,a1,a2,a3,b1,b2,b3,c1,c2,c3;
7      scanf("%d%d%d",&x1,&x2,&x3);
8      a1 = abs(x1-x2);
9      b1 = abs(x1-x3);
10     c1 = a1 + b1;
11     a2 = abs(x2-x1);
12     b2 = abs(x2-x3);
13     c2 = a2 + b2;
14     a3 = abs(x3-x1);
15     b3 = abs(x3-x2);
16     c3 = a3 + b3;
17     if (c1<c2) {
18         if (c1<c3)
19             printf("%d\n",c1);
20         else
21             printf("%d\n",c3);
22     }
23     else if (c2<c3)
24         printf("%d\n",c2);
25     else
26         printf("%d\n",c3);
27     return 0;
28 }
```



## Verdict

2017-11-02 21:11:16	akash_1603108	<a href="#">723A - The New Year: Meeting Friends</a>	GNU C++14	Accepted	15 ms	0 KB
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## Analysis of Solution

Here the complexity of the above program is  $O(1)$ .

**No. of problem solved** : 26

## Codeforces Online Judge

### Problem No. 791A

### Bear and Big Brother

Bear Limak wants to become the largest of bears, or at least to become larger than his brother Bob.

Right now, Limak and Bob weigh  $a$  and  $b$  respectively. It's guaranteed that Limak's weight is smaller than or equal to his brother's weight.

Limak eats a lot and his weight is tripled after every year, while Bob's weight is doubled after every year.

After how many full years will Limak become strictly larger (strictly heavier) than Bob?

## Input

The only line of the input contains two integers  $a$  and  $b$  ( $1 \leq a \leq b \leq 10$ ) — the weight of Limak and the weight of Bob respectively.

## Output

Print one integer, denoting the integer number of years after which Limak will become strictly larger than Bob.

## Code

```
1  #include<iostream>
2  using namespace std;
3  int main()
4  {
5      int a,b,count=0,i;
6      cin>>a>>b;
7      for (i=0 ; a<=b ; i++) {
8          if (a<=b) {
9              a = a*3;
10             b = b*2;
11             count++;
12         }
13     }
14     cout<<count;
15     return 0;
16 }
```

## Verdict

2017-11-02 18:07:12	akash_1603108	<a href="#">791A - Bear and Big Brother</a>	GNU C++14	Accepted	15 ms	0 KB
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## Analysis of Solution

Here the complexity of the above program is  $O(n)$  .

**No. of problem solved : 27**

## **Codeforces Online Judge**

### **Problem No. 758A**

#### **Holiday Of Equality**

In Berland it is the holiday of equality. In honor of the holiday the king decided to equalize the welfare of all citizens in Berland by the expense of the state treasury.

Totally in Berland there are  $n$  citizens, the welfare of each of them is estimated as the integer in  $a_i$  burles (burle is the currency in Berland).

You are the royal treasurer, which needs to count the minimum charges of the kingdom on the king's present. The king can only give money, he hasn't a power to take away them.

#### **Input**

The first line contains the integer  $n$  ( $1 \leq n \leq 100$ ) — the number of citizens in the kingdom. The second line contains  $n$  integers  $a_1, a_2, \dots, a_n$ , where  $a_i$  ( $0 \leq a_i \leq 10^6$ ) — the welfare of the  $i$ -th citizen.

#### **Output**

In the only line print the integer  $S$  — the minimum number of burles which are had to spend.

## Code

```
1  #include<iostream>
2  using namespace std;
3  int main()
4  {
5      int n,a[110],temp,S=0,i,count=0,x,j;
6      cin>>n;
7      for (i=0 ; i<n ; i++) {
8          cin>>a[i];
9          if (n==1) {
10             cout<<"0\n";
11             break;
12         }
13         if (i==1) {
14             if(a[i]>a[i-1])
15                 temp=a[i];
16             else
17                 temp=a[i-1];
18         }
19         if (i>1) {
20             if(a[i]>a[i-1]) {
21                 if (a[i]>temp)
22                     temp=a[i];
23             }
24             else {
25                 if (a[i]>temp)
26                     temp=a[i-1];
27             }
28         }
29     }
30     for (j=0 ; j<n ; j++) {
31         if(n>1 && i!=0) {
32             if (temp==a[j])
33                 count--;
34             if(temp>a[(j)]) {
35                 x = (temp-a[j]);
36                 S = S + x;
37             }
38         }
39     }
40     if (n!=1)
41         cout<<S<<endl;
42     return 0;
43 }
```

## Verdict

2017-11-02 15:08:49	akash_1603108	<a href="#">758A - Holiday Of Equality</a>	GNU C++14	Accepted	15 ms	0 KB
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## **Analysis of Solution**

Here the complexity of the above program is  $O(n)$  .

**No. of problem solved : 28**

## **Codeforces Online Judge**

### **Problem No. 48A**

### **Rock-paper-scissors**

Uncle Fyodor, Matroskin the Cat and Sharic the Dog live their simple but happy lives in Prostokvashino. Sometimes they receive parcels from Uncle Fyodor's parents and sometimes from anonymous benefactors, in which case it is hard to determine to which one of them the package has been sent. A photographic rifle is obviously for Sharic who loves hunting and fish is for Matroskin, but for whom was a new video game console meant? Every one of the three friends claimed that the present is for him and nearly quarreled. Uncle Fyodor had an idea how to solve the problem justly: they should suppose that the console was sent to all three of them and play it in turns. Everybody got relieved but then yet another burning problem popped up — who will play first? This time Matroskin came up with a brilliant solution, suggesting the most fair way to find it out: play rock-paper-scissors together. The rules of the game are very simple. On the count of three every player shows a combination with his hand (or paw). The combination corresponds to one of three things: a rock, scissors or paper. Some of the gestures win over some other ones according to well-known rules: the rock breaks the scissors, the scissors cut the paper, and the paper gets wrapped over the stone. Usually there are two players. Yet there are three friends, that's why they decided to choose the winner like that: If someone shows the gesture that wins over the other two players, then that player wins. Otherwise, another game round is required. Write a program that will determine the winner by the gestures they have shown.

### **Input**

The first input line contains the name of the gesture that Uncle Fyodor showed, the second line shows which gesture Matroskin showed and the third line shows Sharic's gesture.

### **Output**

Print "F" (without quotes) if Uncle Fyodor wins. Print "M" if Matroskin wins and "S" if Sharic wins. If it is impossible to find the winner, print "?".

## Code

```
#include<iostream>
#include<stdio.h>
using namespace std;
int main() {
    string f,m,s;
    cin>>f>>m>>s;
    if(f=="rock") {
        if (m=="rock") {
            if (s=="rock")
                printf("?\\n");
            else if(s=="paper")
                printf("S\\n");
            else
                printf("?\\n");
        }
        else if(m=="scissors") {
            if(s=="scissors")
                printf("F\\n");
            else if(s=="rock")
                printf("?\\n");
            else if (s=="paper")
                printf("?\\n");
        }
        else if(m=="paper") {
            if(s=="scissors")
                printf("?\\n");
            else if(s=="rock")
                printf("M\\n");
            else if (s=="paper")
                printf("?\\n");
        }
    }

    if(f=="scissors") {
        if (m=="scissors") {
            if (s=="scissors")
                printf("?\\n");
            else if(s=="rock")
                printf("S\\n");
            else if (s=="paper")
                printf("?\\n");
        }
        else if(m=="rock") {
            if(s=="scissors")
                printf("M\\n");
            else if(s=="rock")
                printf("?\\n");
            else if (s=="paper")
                printf("?\\n");
        }
        else if(m=="paper") {
            if(s=="scissors")
                printf("?\\n");
            else if(s=="rock")
```

```

        printf("?\\n");
    else if (s=="paper")
        printf("F\\n");
    }
}
if(f=="paper") {
    if (m=="rock") {
        if (s=="rock")
            printf("F\\n");
        else
            printf("?\\n");
    }
    else if(m=="scissors") {
        if(s=="scissors")
            printf("?\\n");
        else if(s=="rock")
            printf("?\\n");
        else if (s=="paper")
            printf("M\\n");
    }
    else if(m=="paper") {
        if(s=="scissors")
            printf("S\\n");
        else if(s=="rock")
            printf("?\\n");
        else if (s=="paper")
            printf("?\\n");
    }
}
return 0;
}

```

## **Verdict**

2017-11-02 08:26:41	akash_1603108	<a href="#">48A - Rock-paper-scissors</a>	GNU C++14	Accepted	30 ms	100 KB
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## **Analysis of Solution**

Here the complexity of the above program is  $O(1)$  .

**No. of problem solved** : 29

## Codeforces Online Judge

### Problem No. 835A

#### Key races

Two boys decided to compete in text typing on the site "Key races". During the competition, they have to type a text consisting of  $s$  characters. The first participant types one character in  $v_1$  milliseconds and has ping  $t_1$  milliseconds. The second participant types one character in  $v_2$  milliseconds and has ping  $t_2$  milliseconds. If connection ping (delay) is  $t$  milliseconds, the competition passes for a participant as follows:

- Exactly after  $t$  milliseconds after the start of the competition the participant receives the text to be entered.
  - Right after that he starts to type it.
  - Exactly  $t$  milliseconds after he ends typing all the text, the site receives information about it.
- The winner is the participant whose information on the success comes earlier. If the information comes from both participants at the same time, it is considered that there is a draw. Given the length of the text and the information about participants, determine the result of the game.

#### Input

The first line contains five integers  $s, v_1, v_2, t_1, t_2$  ( $1 \leq s, v_1, v_2, t_1, t_2 \leq 1000$ ) — the number of characters in the text, the time of typing one character for the first participant, the time of typing one character for the the second participant, the ping of the first participant and the ping of the second participant.

#### Output

If the first participant wins, print "First". If the second participant wins, print "Second". In case of a draw print "Friendship".

#### Code

```
1  #include<stdio.h>
2  int main()
3  {
4      int s,v1,v2,t1,t2,i,p1,p2;
5      scanf("%d%d%d%d%d",&s,&v1,&v2,&t1,&t2);
6      p1 = 2*t1 + s*v1;
7      p2 = 2*t2 + s*v2;
8      if (p1<p2)
9          printf("First\n");
10     else if (p1>p2)
11         printf("Second\n");
12     else
13         printf("Friendship\n");
14
15     return 0;
16 }
```



## **Verdict**

2017-11-01 19:59:43	akash_1603108	835A - Key races	GNU C++14	Accepted	15 ms	0 KB
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## **Analysis of Solution**

Here the complexity of the above program is  $O(1)$  .

**No. of problem solved** : 30

## **Codeforces Online Judge**

### **Problem No. 59A**

#### **Word**

Vasya is very upset that many people on the Net mix uppercase and lowercase letters in one word. That's why he decided to invent an extension for his favorite browser that would change the letters' register in every word so that it either only consisted of lowercase letters or, vice versa, only of uppercase ones. At that as little as possible letters should be changed in the word. For example, the word HoUse must be replaced with house, and the word ViP — with VIP. If a word contains an equal number of uppercase and lowercase letters, you should replace all the letters with lowercase ones. For example, maTRix should be replaced by matrix. Your task is to use the given method on one given word.

#### **Input**

The first line contains a word  $s$  — it consists of uppercase and lowercase Latin letters and possesses the length from 1 to 100.

#### **Output**

Print the corrected word  $s$ . If the given word  $s$  has strictly more uppercase letters, make the word written in the uppercase register, otherwise - in the lowercase one.

## Code

```
1  #include<stdio.h>
2  #include<string.h>
3  int main() {
4      char word[110];
5      int i,n,count_U=0,count_L=0;
6      scanf("%s",word);
7      n = strlen(word);
8      for (i=0 ; i<n ; i++) {
9          if (word[i] >= 'A' && word[i]<='Z')
10             count_U++;
11         else if (word[i] >= 'a' && word[i]<='z')
12             count_L++;
13     }
14     if (count_U > count_L)
15         strupr(word);
16     else if(count_U < count_L)
17         strlwr(word);
18     else if (count_U == count_L)
19         strlwr(word);
20     printf("%s",word);
21     printf("\n");
22     return 0;
23 }
```

## Verdict

2017-11-01 18:00:23	akash_1603108	<a href="#">59A - Word</a>	GNU C++14	Accepted	30 ms	0 KB
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## Analysis of Solution

Here the complexity of the above program is  $O(n)$  .

**No. of problem solved** : 31

## Codeforces Online Judge

### Problem No. 854A

#### Fraction

Petya is a big fan of mathematics, especially its part related to fractions. Recently he learned that

a fraction  $\frac{a}{b}$  is called proper iff its numerator is smaller than its denominator ( $a < b$ ) and that the fraction is called irreducible if its numerator and its denominator are coprime (they do not have positive common divisors except 1). During his free time, Petya thinks about proper irreducible fractions and converts them to decimals using the calculator. One day he mistakenly pressed addition button ( + ) instead of division button ( ÷ ) and got sum of numerator and denominator that was equal to  $n$  instead of the expected decimal notation. Petya wanted to restore the original fraction, but soon he realized that it might not be done uniquely. That's why he decided to

determine maximum possible proper irreducible fraction  $\frac{a}{b}$  such that sum of its numerator and denominator equals  $n$ . Help Petya deal with this problem.

#### Input

In the only line of input there is an integer  $n$  ( $3 \leq n \leq 1000$ ), the sum of numerator and denominator of the fraction.

#### Output

Output two space-separated positive integers  $a$  and  $b$ , numerator and denominator of the maximum possible proper irreducible fraction satisfying the given sum.

#### Code

```
1  #include<stdio.h>
2  int main()
3  {
4      int n,temp;
5      scanf("%d",&n);
6      if (n%2 == 0) {
7          if (((n/2)-1)%2==0 && ((n/2)+1)%2==0)
8              printf("%d %d\n",((n/2)-1)-1,((n/2)+1)+1);
9          else
10             printf("%d %d\n",((n/2)-1),((n/2)+1));
11     }
12     else {
13         temp = n-1;
14         printf("%d %d\n",((temp/2)),(n-(temp/2)));
15     }
16     return 0;
17 }
```

## Verdict

2017-11-01 17:34:51	akash_1603108	<a href="#">854A - Fraction</a>	GNU C++14	Accepted	15 ms	0 KB
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## Analysis of Solution

Here the complexity of the above program is  $O(1)$ .

No. of problem solved : 32

## Codeforces Online Judge

### Problem No. 110A

### Nearly Lucky Number

Petya loves lucky numbers. We all know that lucky numbers are the positive integers whose decimal representations contain only the lucky digits 4 and 7. For example, numbers 47, 744, 4 are lucky and 5, 17, 467 are not.

Unfortunately, not all numbers are lucky. Petya calls a number nearly lucky if the number of lucky digits in it is a lucky number. He wonders whether number  $n$  is a nearly lucky number.

## Input

The only line contains an integer  $n$  ( $1 \leq n \leq 10^{18}$ ).

Please do not use the %lld specifier to read or write 64-bit numbers in C++. It is preferred to use the cin, cout streams or the %I64d specifier.

## Output

Print on the single line "YES" if  $n$  is a nearly lucky number. Otherwise, print "NO" (without the quotes).

## Code

```
1  #include<iostream>
2  #include<string.h>
3  using namespace std;
4  int main()
5  {
6      string n;
7      int count=0,i;
8      cin>>n;
9      for(i=0 ; i<n.size() ; i++) {
10         if(n[i] == '4' || n[i] == '7')
11             count++;
12     }
13     if (count==4 || count==7)
14         printf("YES\n");
15     else
16         printf("NO\n");
17     return 0;
18 }
```

## Verdict

2017-10-31 18:50:18	akash_1603108	<a href="#">110A - Nearly Lucky Number</a>	GNU C++14	Accepted	30 ms	0 KB
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## Analysis of Solution

Here the complexity of the above program is  $O(n)$  .

**No. of problem solved** : 33

## Codeforces Online Judge

### Problem No. 38A

#### Army

The Berland Armed Forces System consists of  $n$  ranks that are numbered using natural numbers from 1 to  $n$ , where 1 is the lowest rank and  $n$  is the highest rank.

One needs exactly  $d_i$  years to rise from rank  $i$  to rank  $i + 1$ . Reaching a certain rank  $i$  having not reached all the previous  $i - 1$  ranks is impossible.

Vasya has just reached a new rank of  $a$ , but he dreams of holding the rank of  $b$ . Find for how many more years Vasya should serve in the army until he can finally realize his dream.

#### Input

The first input line contains an integer  $n$  ( $2 \leq n \leq 100$ ). The second line contains  $n - 1$  integers  $d_i$  ( $1 \leq d_i \leq 100$ ). The third input line contains two integers  $a$  and  $b$  ( $1 \leq a < b \leq n$ ). The numbers on the lines are space-separated.

#### Output

Print the single number which is the number of years that Vasya needs to rise from rank  $a$  to rank  $b$ .

#### Code

```
1  #include<stdio.h>
2  int main()
3  {
4      int n,d[110],a,b,i,sum=0;
5      scanf("%d",&n);
6      for (i=0 ; i<n-1 ; i++) {
7          scanf("%d",&d[i]);
8      }
9      scanf("%d%d",&a,&b);
10     for (i=a ; i<=b-1 ; i++) {
11         sum+=d[i-1];
12     }
13     printf("%d\n",sum);
14     return 0;
15 }
```

## Verdict

2017-10-31 18:05:24	akash_1603108	38A - Army	GNU C++14	Accepted	30 ms	0 KB
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## Analysis of Solution

Here the complexity of the above program is  $O(n)$ .

**No. of problem solved** : 34

## Codeforces Online Judge

### Problem No. 456A

### Laptops

One day Dima and Alex had an argument about the price and quality of laptops. Dima thinks that the more expensive a laptop is, the better it is. Alex disagrees. Alex thinks that there are two laptops, such that the price of the first laptop is less (strictly smaller) than the price of the second laptop but the quality of the first laptop is higher (strictly greater) than the quality of the second laptop.

Please, check the guess of Alex. You are given descriptions of  $n$  laptops. Determine whether two described above laptops exist.

### Input

The first line contains an integer  $n$  ( $1 \leq n \leq 10^5$ ) — the number of laptops.

Next  $n$  lines contain two integers each,  $a_i$  and  $b_i$  ( $1 \leq a_i, b_i \leq n$ ), where  $a_i$  is the price of the  $i$ -th laptop, and  $b_i$  is the number that represents the quality of the  $i$ -th laptop (the larger the number is, the higher is the quality).

All  $a_i$  are distinct. All  $b_i$  are distinct.

### Output

If Alex is correct, print "Happy Alex", otherwise print "Poor Alex" (without the quotes).

## Code

```
1  #include<stdio.h>
2  int main()
3  {
4      int n,a,b,c=0,i;
5      scanf("%d",&n);
6      for (i = 0 ; i<n ; i+=1) {
7          scanf("%d%d",&a,&b);
8          if (a<b)
9              c+=1;
10     }
11     if (c>0)
12         printf("Happy Alex\n");
13     else
14         printf("Poor Alex\n");
15     return 0;
16 }
```

## Verdict

2017-10-27 06:16:44	akash_1603108	<a href="#">456A - Laptops</a>	GNU C++14	Accepted	31 ms	0 KB
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## Analysis of Solution

Here the complexity of the above program is  $O(n)$  .

No of problem solved : 35



## Codeforces Online Judge

### Problem No. 158A

#### Next Round

"Contestant who earns a score equal to or greater than the  $k$ -th place finisher's score will advance to the next round, as long as the contestant earns a positive score..." — an excerpt from contest rules.

A total of  $n$  participants took part in the contest ( $n \geq k$ ), and you already know their scores. Calculate how many participants will advance to the next round.

#### Input

The first line of the input contains two integers  $n$  and  $k$  ( $1 \leq k \leq n \leq 50$ ) separated by a single space.

The second line contains  $n$  space-separated integers  $a_1, a_2, \dots, a_n$  ( $0 \leq a_i \leq 100$ ), where  $a_i$  is the score earned by the participant who got the  $i$ -th place. The given sequence is non-increasing (that is, for all  $i$  from 1 to  $n - 1$  the following condition is fulfilled:  $a_i \geq a_{i+1}$ ).

#### Output

Output the number of participants who advance to the next round.

#### Code

```
1  #include<stdio.h>
2  int main()
3  {
4      int i,n,k,arr[100],c=0;
5      scanf("%d %d",&n,&k);
6      for(i = 0 ; i<n ; i+=1) {
7          scanf("%d",&arr[i]);
8      }
9      for(i = 0 ; i<n ; i+=1) {
10         if(arr[i]>=arr[k-1]&&arr[i]>0)
11             c+=1;
12     }
13     printf("%d\n",c);
14     return 0;
15 }
```

## Verdict

2017-10-27 04:28:08	akash_1603108	<a href="#">158A - Next Round</a>	GNU C++14	Accepted	30 ms	0 KB
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## Analysis of Solution

Here the complexity of the above program is  $O(n)$ .

**No. of problem solved** : 36

## Codeforces Online Judge

### Problem No. 486A

### Calculating Function

For a positive integer  $n$  let's define a function  $f$ :

$$f(n) = -1 + 2 - 3 + \dots + (-1)^n n$$

Your task is to calculate  $f(n)$  for a given integer  $n$ .

## Input

The single line contains the positive integer  $n$  ( $1 \leq n \leq 10^{15}$ ).

## Output

Print  $f(n)$  in a single line.

## Code

```
1  #include<iostream>
2  using namespace std;
3  int main()
4  {
5      long long int n;
6      cin>>n;
7      if (n%2==0)
8          cout<<n/2<<endl;
9      else
10         cout<<(1+n/2)*(-1)<<endl;
11     return 0;
12 }
```

## Verdict

2017-10-27 04:13:07	akash_1603108	<a href="#">486A - Calculating Function</a>	GNU C++14	Accepted	15 ms	0 KB
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## Analysis of Solution

Here the complexity of the above program is  $O(1)$ .

**No. of problem solved** : 37

## Codeforces Online Judge

### Problem No. 467A

### George and Accommodation

George has recently entered the BSUCP (Berland State University for Cool Programmers). George has a friend Alex who has also entered the university. Now they are moving into a dormitory. George and Alex want to live in the same room. The dormitory has  $n$  rooms in total. At the moment the  $i$ -th room has  $p_i$  people living in it and the room can accommodate  $q_i$  people in total ( $p_i \leq q_i$ ). Your task is to count how many rooms has free place for both George and Alex.

## Input

The first line contains a single integer  $n$  ( $1 \leq n \leq 100$ ) — the number of rooms. The  $i$ -th of the next  $n$  lines contains two integers  $p_i$  and  $q_i$  ( $0 \leq p_i \leq q_i \leq 100$ ) — the number of people who already live in the  $i$ -th room and the room's capacity.

## Output

Print a single integer — the number of rooms where George and Alex can move in.

## Code

```
1  #include<stdio.h>
2  int main()
3  {
4      int n,p,q,i,seat=0;
5      scanf("%d",&n);
6      for (i=0 ; i<n ; i+=1) {
7          scanf("%d%d",&p,&q);
8          if ((q-p) >= 2)
9              seat+=1;
10     }
11     printf("%d\n",seat);
12     return 0;
13 }
```

## **Verdict**

2017-10-24 13:44:27	akash_1603108	<a href="#">467A - George and Accommodation</a>	GNU C++14	Accepted	15 ms	1800 KB
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## **Analysis of Solution**

Here the complexity of the above program is  $O(n)$ .

**No. of problem solved** : 38

## **Codeforces Online Judge**

### **Problem No. 339A**

### **Helpful Math**

Xenia the beginner mathematician is a third year student at elementary school. She is now learning the addition operation.

The teacher has written down the sum of multiple numbers. Pupils should calculate the sum. To make the calculation easier, the sum only contains numbers 1, 2 and 3. Still, that isn't enough for Xenia. She is only beginning to count, so she can calculate a sum only if the summands follow in non-decreasing order. For example, she can't calculate sum  $1+3+2+1$  but she can calculate sums  $1+1+2$  and  $3+3$ .

You've got the sum that was written on the board. Rearrange the summands and print the sum in such a way that Xenia can calculate the sum.

## **Input**

The first line contains a non-empty string  $s$  — the sum Xenia needs to count. String  $s$  contains no spaces. It only contains digits and characters "+". Besides, string  $s$  is a correct sum of numbers 1, 2 and 3. String  $s$  is at most 100 characters long.

## **Output**

Print the new sum that Xenia can count.

## Code

```
1  #include<stdio.h>
2  #include<string.h>
3  int main() {
4      int i,j;
5      char s[130],t[100];
6      scanf("%s",s);
7      if (strlen(s) != 1) {
8          for (i = 1 ; i < (strlen(s)-1) ; i+=1)
9              for (j=0 ; j<(strlen(s)-2) ; j+=1)
10                 if (s[j] > s[j+2]) {
11                     t[j] = s[j];
12                     s[j] = s[j+2];
13                     s[j+2] = t[j];
14                 }
15         printf("%s",s);
16         printf("\n");
17     }
18     else {
19         printf("%s",s);
20         printf("\n");
21     }
22     return 0;
23 }
```

## Verdict

2017-10-24 13:41:04	akash_1603108	<a href="#">339A - Helpful Maths</a>	GNU C++14	Accepted	30 ms	1800 KB
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## Analysis of Solution

Here the complexity of the above program is  $O(n^2)$ .

**No. of problem solved : 39**

## **Codeforces Online Judge**

### **Problem No. 474A**

#### **Keyboard**

Our good friend Mole is trying to code a big message. He is typing on an unusual keyboard with characters arranged in following way:

```
qwertyuiop  
asdfghjkl;  
zxcvbnm, ./
```

Unfortunately Mole is blind, so sometimes it is problem for him to put his hands accurately. He accidentally moved both his hands with one position to the left or to the right. That means that now he presses not a button he wants, but one neighboring button (left or right, as specified in input).

We have a sequence of characters he has typed and we want to find the original message.

#### **Input**

First line of the input contains one letter describing direction of shifting ('L' or 'R' respectively for left or right).

Second line contains a sequence of characters written by Mole. The size of this sequence will be no more than 100. Sequence contains only symbols that appear on Mole's keyboard. It doesn't contain spaces as there is no space on Mole's keyboard.

It is guaranteed that even though Mole hands are moved, he is still pressing buttons on keyboard and not hitting outside it.

#### **Output**

Print a line that contains the original message.

## Code

```
1  #include<stdio.h>
2  #include<string.h>
3  int main()
4  {
5      int i,j;
6      char shift;
7      char input[100],key[30] = "qwertyuiopasdfghjkl;zxcvbnm,./";
8      scanf("%c",&shift);
9      scanf("%s",input);
10     if (shift == 'R') {
11         for (i=0 ; i<strlen(input) ; i+=1) {
12             for (j=0 ; j<30 ; j+=1) {
13                 if (input[i] == key[j]) {
14                     printf("%c",key[j-1]);
15                     break;
16                 }
17             }
18         }
19     }
20     if (shift == 'L') {
21         for (i=0 ; i<strlen(input) ; i+=1) {
22             for (j=0 ; j<30 ; j+=1) {
23                 if (input[i] == key[j]) {
24                     printf("%c",key[j+1]);
25                     break;
26                 }
27             }
28         }
29     }
30     printf("\n");
31     return 0;
32 }
```

## Verdict

2017-10-19 19:43:45	akash_1603108	<a href="#">474A - Keyboard</a>	GNU C++14	Accepted	15 ms	1900 KB
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## Analysis of Solution

Here the complexity of the above program is  $O(n^2)$ .

**No. of problem solved** : 40

## Codeforces Online Judge

### Problem No. 69A

#### Young Physicist

A guy named Vasya attends the final grade of a high school. One day Vasya decided to watch a match of his favorite hockey team. And, as the boy loves hockey very much, even more than physics, he forgot to do the homework. Specifically, he forgot to complete his physics tasks. Next day the teacher got very angry at Vasya and decided to teach him a lesson. He gave the lazy student a seemingly easy task: You are given an idle body in space and the forces that affect it. The body can be considered as a material point with coordinates (0; 0; 0). Vasya had only to answer whether it is in equilibrium. "Piece of cake" — thought Vasya, we need only to check if the sum of all vectors is equal to 0. So, Vasya began to solve the problem. But later it turned out that there can be lots and lots of these forces, and Vasya can not cope without your help. Help him. Write a program that determines whether a body is idle or is moving by the given vectors of forces.

#### Input

The first line contains a positive integer  $n$  ( $1 \leq n \leq 100$ ), then follow  $n$  lines containing three integers each: the  $x_i$  coordinate, the  $y_i$  coordinate and the  $z_i$  coordinate of the force vector, applied to the body ( $-100 \leq x_i, y_i, z_i \leq 100$ ).

#### Output

Print the word "YES" if the body is in equilibrium, or the word "NO" if it is not.

#### Code

```
1  #include<stdio.h>
2  int main()
3  {
4      int row,i,j,sumA=0,sumB=0,sumC=0;
5      scanf("%d",&row);
6      signed int n,co[row][2];
7      for (i=0 ; i<row ; i+=1) {
8          for (j=0 ; j<3 ; j+=1) {
9              scanf("%d",&co[i][j]);
10             }
11             sumA += co[i][0];
12             sumB += co[i][1];
13             sumC += co[i][2];
14         }
15         if (sumA == 0 && sumB == 0 && sumC == 0)
16             printf("YES\n");
17         else
18             printf("NO\n");
19
20         return 0;
21     }
```



## **Verdict**

2017-10-19 10:27:00	akash_1603108	69A - Young Physicist	GNU C++14	Accepted	30 ms	1900 KB
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## **Analysis of Solution**

Here the complexity of the above program is  $O(n^2)$

**No. of problem solved** : 41

## **Codeforces Online Judge**

### **Problem No. 41A**

### **Translation**

The translation from the Berland language into the Birland language is not an easy task. Those languages are very similar: a berlandish word differs from a birlandish word with the same meaning a little: it is spelled (and pronounced) reversely. For example, a Berlandish word code corresponds to a Birlandish word edoc. However, it's easy to make a mistake during the «translation». Vasya translated word  $s$  from Berlandish into Birlandish as  $t$ . Help him: find out if he translated the word correctly.

### **Input**

The first line contains word  $s$ , the second line contains word  $t$ . The words consist of lowercase Latin letters. The input data do not consist unnecessary spaces. The words are not empty and their lengths do not exceed 100 symbols.

### **Output**

If the word  $t$  is a word  $s$ , written reversely, print YES, otherwise print NO.

## Code

```
1  #include<stdio.h>
2  #include<string.h>
3  int main()
4  {
5      int i,c=0;
6      char s[110],p[110];
7      scanf("%s",s);
8      scanf("%s",p);
9      for (i=0 ; i<strlen(s) ; i+=1)
10         if (s[i] == p[(strlen(p)-1)-i])
11             c+=1;
12     if (c == (strlen(s)))
13         printf("YES\n");
14     else
15         printf("NO\n");
16     return 0;
17 }
```

## Verdict

2017-10-18 11:25:14	akash_1603108	<a href="#">41A - Translation</a>	GNU C++14	Accepted	30 ms	1900 KB
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## Analysis of solution

Here the complexity of the above program is  $O(n^2)$

**No. of problem solved** : 42

## Codeforces Online Judge

### Problem No. 9A

### Die Roll

Yakko, Wakko and Dot, world-famous animaniacs, decided to rest from acting in cartoons, and take a leave to travel a bit. Yakko dreamt to go to Pennsylvania, his Motherland and the Motherland of his ancestors. Wakko thought about Tasmania, its beaches, sun and sea. Dot chose Transylvania as the most mysterious and unpredictable place.

But to their great regret, the leave turned to be very short, so it will be enough to visit one of the three above named places. That's why Yakko, as the cleverest, came up with a truly genius idea: let each of the three roll an ordinary six-sided die, and the one with the highest amount of points will be the winner, and will take the other two to the place of his/her dreams.

Yakko thrown a die and got Y points, Wakko — W points. It was Dot's turn. But she didn't hurry. Dot wanted to know for sure what were her chances to visit Transylvania.

It is known that Yakko and Wakko are true gentlemen, that's why if they have the same amount of points with Dot, they will let Dot win.

### Input

The only line of the input file contains two natural numbers Y and W — the results of Yakko's and Wakko's die rolls.

### Output

Output the required probability in the form of irreducible fraction in format «A/B», where A — the numerator, and B — the denominator. If the required probability equals to zero, output «0/1». If the required probability equals to 1, output «1/1».

### Code

```
1  #include<stdio.h>
2  int main()
3  {
4      int w,y,temp;
5      scanf("%d%d",&y,&w);
6      if (y>=w)
7          temp = 7 - y;
8      else
9          temp = 7 - w;
10     if (temp==1) printf("1/6\n");
11     else if (temp==2) printf("1/3\n");
12     else if (temp==3) printf("1/2\n");
13     else if (temp==4) printf("2/3\n");
14     else if (temp==5) printf("5/6\n");
15     else if (temp==6) printf("1/1\n");
16     return 0;
17 }
```

### Verdict

2017-10-15 13:19:48	akash_1603108	<a href="#">9A - Die Roll</a>	GNU C++14	Accepted	30 ms	1800 KB
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### Analysis of Solution

Here the complexity of the above program is  $O(1)$ .

**No. of problem solved** : 43

## Codeforces Online Judge

### Problem No. 703A

#### Mishka and Game

Mishka is a little polar bear. As known, little bears loves spending their free time playing dice for chocolates. Once in a wonderful sunny morning, walking around blocks of ice, Mishka met her friend Chris, and they started playing the game.

Rules of the game are very simple: at first number of rounds  $n$  is defined. In every round each of the players throws a cubical dice with distinct numbers from 1 to 6 written on its faces. Player, whose value after throwing the dice is greater, wins the round. In case if player dice values are equal, no one of them is a winner.

In average, player, who won most of the rounds, is the winner of the game. In case if two players won the same number of rounds, the result of the game is draw.

Mishka is still very little and can't count wins and losses, so she asked you to watch their game and determine its result. Please help her!

#### Input

The first line of the input contains single integer  $n$  ( $1 \leq n \leq 100$ ) — the number of game rounds.

The next  $n$  lines contains rounds description.  $i$ -th of them contains pair of integers  $m_i$  and  $c_i$  ( $1 \leq m_i, c_i \leq 6$ ) — values on dice upper face after Mishka's and Chris' throws in  $i$ -th round respectively.

#### Output

If Mishka is the winner of the game, print "Mishka" (without quotes) in the only line.

If Chris is the winner of the game, print "Chris" (without quotes) in the only line.

If the result of the game is draw, print "Friendship is magic!^^" (without quotes) in the only line.

## Code

```
1  #include<stdio.h>
2  int main()
3  {
4      int r,m,c,countM=0,countC=0,i;
5      scanf("%d",&r);
6      for (i=0 ; i<r ; i+=1) {
7          scanf("%d%d",&m,&c);
8          if (m > c)
9              countM+=1;
10         else if (m < c)
11             countC+=1;
12     }
13     if (countM > countC)
14         printf("Mishka\n");
15     else if (countM < countC)
16         printf("Chris\n");
17     else if (countC == countM)
18         printf("Friendship is magic!^^\n");
19     return 0;
20 }
```

## Verdict

2017-10-19 09:30:45	akash_1603108	<a href="#">703A - Mishka and Game</a>	GNU C++14	Accepted	30 ms	1900 KB
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## Analysis of Solution

Here the complexity of the program is  $O(n)$ .

**No. of problem solved** : 44

## Codeforces Online Judge

### Problem No. 116A

### Tram

Linear Kingdom has exactly one tram line. It has  $n$  stops, numbered from 1 to  $n$  in the order of tram's movement. At the  $i$ -th stop  $a_i$  passengers exit the tram, while  $b_i$  passengers enter it. The tram is empty before it arrives at the first stop. Also, when the tram arrives at the last stop, all passengers exit so that it becomes empty.

Your task is to calculate the tram's minimum capacity such that the number of people inside the tram at any time never exceeds this capacity. Note that at each stop all exiting passengers exit before any entering passenger enters the tram.

## Input

The first line contains a single number  $n$  ( $2 \leq n \leq 1000$ ) — the number of the tram's stops. Then  $n$  lines follow, each contains two integers  $a_i$  and  $b_i$  ( $0 \leq a_i, b_i \leq 1000$ ) — the number of passengers that exits the tram at the  $i$ -th stop, and the number of passengers that enter the tram at the  $i$ -th stop. The stops are given from the first to the last stop in the order of tram's movement.

- The number of people who exit at a given stop does not exceed the total number of people in the tram immediately before it arrives at the stop. More formally,  
 $\forall i (1 \leq i \leq n) : \sum_{j=1}^{i-1} b_j - \sum_{j=1}^{i-1} a_j \geq a_i$ . This particularly means that  $a_1 = 0$ .
- At the last stop, all the passengers exit the tram and it becomes empty. More formally,  
 $\sum_{j=1}^{n-1} b_j - \sum_{j=1}^{n-1} a_j = a_n$ .
- No passenger will enter the train at the last stop. That is,  $b_n = 0$ .

## Output

Print a single integer denoting the minimum possible capacity of the tram (0 is allowed).

## Code

```
1  #include<iostream>
2  #include<stdlib.h>
3  #include<math.h>
4  using namespace std;
5  int main()
6  {
7      int n,a,b,p=0,t=0;
8      cin>>n;
9      for (int i = 0; i<n ; i+=1) {
10         cin>>a>>b;
11         if (p=0)
12             p += b;
13         else {
14             p -= a;
15             p += b;
16         }
17         if (p > t) {
18             t = p;
19         }
20     }
21     printf("%d\n",t);
22     return 0;
23 }
```

## Verdict

2017-10-15 13:38:51	akash_1603108	116A - Tram	GNU C++14	Accepted	30 ms	1800 KB
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## Analysis of Solution

Here the complexity of the above program is  $O(n)$ .

**No. of problem solved** : 45

## Codeforces Online Judge

### Problem No. 554A

#### Kyoya and Photobooks

Kyoya Ootori is selling photobooks of the Ouran High School Host Club. He has 26 photos, labeled "a" to "z", and he has compiled them into a photo booklet with some photos in some order (possibly with some photos being duplicated). A photo booklet can be described as a string of lowercase letters, consisting of the photos in the booklet in order. He now wants to sell some "special edition" photobooks, each with one extra photo inserted anywhere in the book. He wants to make as many distinct photobooks as possible, so he can make more money. He asks Haruhi, how many distinct photobooks can he make by inserting one extra photo into the photobook he already has?

Please help Haruhi solve this problem.

#### Input

The first line of input will be a single string  $s$  ( $1 \leq |s| \leq 20$ ). String  $s$  consists only of lowercase English letters.

#### Output

Output a single integer equal to the number of distinct photobooks Kyoya Ootori can make.

#### Code

```
1  #include<stdio.h>
2  #include<string.h>
3  int main()
4  {
5      int x;
6      char s[25];
7      scanf("%s",s);
8      x = strlen(s);
9      printf("%d\n",(26*(x+1))-x);
10     return 0;
11 }
12
```

#### Verdict

2017-10-15 12:25:31	akash_1603108	<a href="#">554A - Kyoya and Photobooks</a>	GNU C++14	Accepted	15 ms	0 KB
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## Analysis of Solution

Here the complexity of the above program is  $O(1)$ .

No. of problem solved : 46

## Codeforces Online Judge

### Problem No. 133A

### HQ9+

HQ9+ is a joke programming language which has only four one-character instructions:

- "H" prints "Hello, World!",
- "Q" prints the source code of the program itself,
- "9" prints the lyrics of "99 Bottles of Beer" song,
- "+" increments the value stored in the internal accumulator.

Instructions "H" and "Q" are case-sensitive and must be uppercase. The characters of the program which are not instructions are ignored. You are given a program written in HQ9+. You have to figure out whether executing this program will produce any output.

### Input

The input will consist of a single line  $p$  which will give a program in HQ9+. String  $p$  will contain between 1 and 100 characters, inclusive. ASCII-code of each character of  $p$  will be between 33 (exclamation mark) and 126 (tilde), inclusive.

### Output

Output "YES", if executing the program will produce any output, and "NO" otherwise.

### Code

```
1  #include<stdio.h>
2  #include<string.h>
3  int main()
4  {
5      int i;
6      char p[120];
7      scanf("%s",p);
8      for (i = 0 ; i< strlen(p) ; i+=1) {
9          if (p[i] == 'H' || p[i] == 'Q' || p[i] == '9') {
10             printf("YES\n");
11             break;
12         }
13     }
14     if(i == strlen(p))
15         printf("NO\n");
16     return 0;
17 }
```



## Verdict

2017-10-15 11:10:28	akash_1603108	<a href="#">133A - HQ9+</a>	GNU C++14	Accepted	30 ms	1800 KB
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## Analysis of Solution

Here the complexity of the above program is  $O(n)$ .

No. of problem solved: 47

## Codeforces Online Judge

### Problem No. 630C

### Lucky Numbers

The numbers of all offices in the new building of the Tax Office of IT City will have lucky numbers. Lucky number is a number that consists of digits 7 and 8 only. Find the maximum number of offices in the new building of the Tax Office given that a door-plate can hold a number not longer than  $n$  digits.

## Input

The only line of input contains one integer  $n$  ( $1 \leq n \leq 55$ ) — the maximum length of a number that a door-plate can hold.

## Output

Output one integer — the maximum number of offices, than can have unique lucky numbers not longer than  $n$  digits.

## Code

```
1  #include<stdio.h>
2  #include<math.h>
3  int main()
4  {
5      int n,i;
6      scanf("%d",&n);
7      printf("%lld\n", (long long int) (pow(2,n+1)-2));
8      return 0;
9  }
```

## Verdict

2017-10-14 12:18:13	akash_1603108	<a href="#">630C - Lucky Numbers</a>	GNU C11	Accepted	15 ms	0 KB
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## Analysis of Solution

Here the complexity of the above program is  $O(1)$ .

**No. of problem solved** : 48

## Codeforces Online Judge

### Problem No. 96A

### Football

Petya loves football very much. One day, as he was watching a football match, he was writing the players' current positions on a piece of paper. To simplify the situation he depicted it as a string consisting of zeroes and ones. A zero corresponds to players of one team; a one corresponds to players of another team. If there are at least 7 players of some team standing one after another, then the situation is considered dangerous. For example, the situation 0010011011111101 is dangerous and 11110111011101 is not. You are given the current situation. Determine whether it is dangerous or not.

## Input

The first input line contains a non-empty string consisting of characters "0" and "1", which represents players. The length of the string does not exceed 100 characters. There's at least one player from each team present on the field.

## Output

Print "YES" if the situation is dangerous. Otherwise, print "NO".

## Code

```
1  #include<stdio.h>
2  #include<string.h>
3  int main() {
4      char str[110];
5      int i;
6      scanf("%s",str);
7      for (i = 0 ; i < strlen(str) ; i+=1) {
8          if ( (str[i] == '0' && str[i] == str[i+1] && str[i+1] == str[i+2] &&
9              str[i+2] == str[i+3] && str[i+3] == str[i+4] && str[i+4] == str[i+5] &&
10             str[i+5] == str[i+6] ) || (
11             str[i] == '1' && str[i] == str[i+1] && str[i+1] == str[i+2] &&
12             str[i+2] == str[i+3] && str[i+3] == str[i+4] && str[i+4] == str[i+5] &&
13             str[i+5] == str[i+6] ) ) {
14             printf("YES\n");
15             break;
16         }
17         else if (i == (strlen(str)-1)) {
18             printf("NO\n");
19             break;
20         }
21     }
22     return 0;
23 }
```

## Verdict

<a href="#">31300241</a>	2017-10-14 12:49:05	akash_1603108	<a href="#">96A - Football</a>	GNU C++14	Accepted	30 ms	0 KB
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## Analysis of Solution

Here the complexity of the program is  $O(n)$ .

**No. of problem solved** : 49

## Codeforces Online Judge

### Problem No. 282A

#### Bit++

The classic programming language of Bitland is Bit++. This language is so peculiar and complicated.

The language is that peculiar as it has exactly one variable, called  $x$ . Also, there are two operations:

- Operation ++ increases the value of variable  $x$  by 1.
- Operation -- decreases the value of variable  $x$  by 1.

A statement in language Bit++ is a sequence, consisting of exactly one operation and one variable  $x$ . The statement is written without spaces, that is, it can only contain characters "+", "-", "X". Executing a statement means applying the operation it contains. A programme in Bit++ is a sequence of statements, each of them needs to be executed. Executing a programme means executing all the statements it contains. You're given a programme in language Bit++. The initial value of  $x$  is 0. Execute the programme and find its final value (the value of the variable when this programme is executed).

## Input

The first line contains a single integer  $n$  ( $1 \leq n \leq 150$ ) — the number of statements in the programme.

Next  $n$  lines contain a statement each. Each statement contains exactly one operation (++ or --) and exactly one variable  $x$  (denoted as letter «X»). Thus, there are no empty statements. The operation and the variable can be written in any order.

## Output

Print a single integer — the final value of  $x$ .

## Code

```
1  #include<stdio.h>
2  #include<string.h>
3  int main()
4  {
5      int i,j,n,c=0;
6      char x[100];
7      scanf("%d",&n);
8      for (i = 0 ; i<n ; i+=1) {
9          scanf("%s",x);
10         for (j = 0 ; j<strlen(x) ; j+=1) {
11             if ( (x[j] == '+' && x[j+1] == '+' && x[j+2] == 'X') || (x[j] == 'X' && x[j+1] == '+' && x[j+2] == '+' ) )
12                 c+=1;
13             else if ( (x[j] == '-' && x[j+1] == '-' && x[j+2] == 'X') || (x[j] == 'X' && x[j+1] == '-' && x[j+2] == '-' ) )
14                 c-=1;
15         }
16     }
17     printf("%d\n",c);
18
19     return 0;
20 }
```

## Verdict

2017-10-14 15:58:16	akash_1603108	<a href="#">282A - Bit++</a>	GNU C	Accepted	15 ms	0 KB
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## Analysis of Solution

Here the complexity of the program is  $O(n^2)$  .

**No. of total problem solved** : 50