



INFORMATICS COMPETITION – EDITORIAL

TASK 01

IMPLEMENTATION

```
#include <iostream>
#include <string>

#define MAXN 300010

using namespace std;

string s;
int zeros, ones;

int main() {
    cin>>s;
    for (int i=0; i<s.size(); i++)
    {
        if (s[i]=='0') zeros++;
        else ones++;
    }

    cout<<ones-zeros-1<<endl;
}
```

TASK 02

Solution

One pass through given array is not enough to check if it is interesting and to find the longest simple row. We use three additional variables - a flag that we will raise if we see that the array is not interesting, and two variables for the current length of the simple array and the maximum intended length. First we check the first element: if it is not 0, we raise the flag. Otherwise, we increase the length of the current simple array. After that, we start to visit the rest of the numbers from the array. If the current length of the simple array is equal to 0, we check if the current member is equal to 0. If it is true, we increase the length, otherwise we raise the incorrect array flag. Otherwise, if the current member is equal the previous one plus 1, we increase the current length of the simple array by 1. If it is not true, however, we see if the current length of

the simple row is greater than the maximum intended length and have an analogous check as before, if the current element of the array is equal to 0. After the loop, we have one important check - if the maximum length of a simple sequence is greater than K, then the sequence is not interesting.

TASK 03

IMPLEMENTATION 1

```
#include <iostream>
using namespace std;

int main()
{
    int i,A,B,C,X;
    for(i=1;i<=3;i++)
    {
        // read a tripple
        cin>>A>>B>>C;
        // create order: A<=B<=C
        if (A>B) {X=A;A=B;B=X;}
        if (B>C) {X=B;B=C;C=X;}
        if (A>B) {X=A;A=B;B=X;}

// check consecutive condition
        if (A>1)
            cout << 1 << endl;
        else
        { // A=1
            if (B>2)
                cout << 2 << endl;
            else
            {
                if (B==1)
                { // B=1
                    if (C>3)
                        cout << 3 << endl;
                    else
                        cout << A+B+C+1 << endl; // case C=1,2,3
                }
            }
            else // B=2
            {
                if (C>4)
                    cout << 4 << endl;
                else
                    cout << A+B+C+1 << endl; // case C=2,3,4
            }
        }
    }
}
```

```
}  
}
```

IMPLEMENTATION 2

```
#include <iostream>  
#include <set>  
  
using namespace std;  
  
int main()  
{  
    for(int i = 1; i <= 3; i++) {  
        int a, b, c;  
        cin >> a >> b >> c;  
        set<int> s;  
        s.insert(a); s.insert(b); s.insert(c);  
        s.insert(a + b);    s.insert(a + c);  
        s.insert(b + c);    s.insert(a + b + c);  
        for(int i = 1;; i++) {  
            if(!s.count(i)) {  
                cout << i << '\n';  
                break;  
            }  
        }  
    }  
    return 0;  
}
```

TASK 04

IMPLEMENTATION

```
#include <bits/stdc++.h>  
using namespace std;  
  
long double a, b;  
  
int main() {  
    cin>>a>>b;  
    if (a<b) swap(a, b);  
  
    long double subdiag=sqrt(((a*a)/4) + b*b);  
    cout<<fixed;  
    if (subdiag<=a) cout<<setprecision(5)<<(subdiag)/a;  
    else cout<<setprecision(5)<<1;  
}
```