## **Sum of Digits**

#include<iostream>

using *namespace* std;

*int* sumOfDigits(*int*);

*int* main(){

*int* num, n;

    cout<<"Enter number: ";

    cin>>num;

    n=sumOfDigits(num);

    cout<<"Sum of the digits of given number: "<<n<<endl;

    return 0;

}

*int* sumOfDigits(*int* *num*){

*int* n, sum=0, rem;

    while(*num*!=0){

        rem=*num*%10;

        sum=sum+rem;

*num*=*num*/10;

    }

    return sum;

}

## **Reverse a Number**

#include<iostream>

using *namespace* std;

*int* main(){

*int* num, rev=0, rem, base=1;

    cout<<"Enter number: ";

    cin>>num;

    while(num>0){

        rem=num%10;

        rev=rev\*10+rem;

        num/=10;

    }

    cout<<"Reverse of the given number: "<<rev<<endl;

}

## **Sum of Digits of a Given Number until a Single Digit**

#include<iostream>

using *namespace* std;

*int* sumofDigits(*int* *n*){

*int* rem, sum=0;

    while(*n*>0){

        rem=*n*%10;

        sum=sum+rem;

*n*=*n*/10;

    }

    return sum;

}

*int* main(){

*int* num, rem;

    cout<<"Enter the number: ";

    cin>>num;

    while(num>10){

        num=sumofDigits(num);

    }

    cout<<num<<endl;

    return 0;

}

## **Largest Number out of Four Given Numbers**

#include<iostream>

using *namespace* std;

*int* main(){

*int* numbers[4], large;

    for(*int* i=0; i<4; i++){

        cin>>numbers[i];

    }

    cout<<"Given numbers: ";

    for(*int* i=0; i<4; i++){

        cout<<numbers[i]<<" ";

    }

    large = numbers[0];

    for(*int* i=0; i<4; i++){

        if(numbers[i]>large){

            large=numbers[i];

        }

    }

    cout<<endl<<"Largest = "<<large<<endl;

    return 0;

}

## **Small Factorials**

#include <boost/multiprecision/cpp\_int.hpp>

#include <iostream>

using namespace std;

using namespace boost::multiprecision;

int main() {

int t;

cin>>t;

while(t--)

{

int n;

cin>>n;

cpp\_int fact=1;

for(int i=n;i>0;i--)

fact=fact\*i;

cout<<fact<<endl;

}

return 0;

}

## **Red Light, Green Light**

#include <iostream>

using namespace std;

int main() {

int t;

cin>>t;

while(t--){

int n, k;

cin>>n>>k;

int player\_heights[n];

for(int i=0; i<n; i++){

cin>>player\_heights[i];

}

int count=0;

for(int i=0; i<n; i++){

if(player\_heights[i]>k)

count++;

}

cout<<count<<endl;

}

return 0;

}

## **Coronavirus Spread**

#include <iostream>

using namespace std;

int main() {

int t;

cin>>t;

while(t--){

int n;

cin>>n;

int list[n];

for(int i=0; i<n; i++)

cin>>list[i];

int count=1, min=n, max=0;

for(int i=0; i<n; i++){

if(((list[i+1] - list[i])>=0) && (list[i+1] - list[i])<=2){

count++;

}

else{

if(min > count)

min = count;

count = 1;

}

if(max < count)

max = count;

}

cout<<min<<" "<<max<<endl;

}

return 0;

}

## **Broken Telephone**

#include <iostream>

using namespace std;

int main()

{

int t;

cin>>t;

while(t--){

int n;

cin>>n;

int msg[n];

for(int i=0; i<n; i++){

cin>>msg[i];

}

int count=0;

for(int i=0; i<n; i++){

if(i>0 && i<n-1){

if(msg[i] != msg[i-1] || msg[i] != msg[i+1]){

count++;

}

}

}

if(msg[n-1] != msg[n-2]){

count++;

}

if(msg[0] != msg[1]){

count++;

}

cout<<count<<endl;

}

return 0;

}

## **Box Of Chocolates**

#include <iostream>

using namespace std;

int main() {

int j, n, t, i, s=0, p, max=-1, res=0, temp=0;

cin>>j;

while(j--){

cin>>n;

int a[n];

for(i=0;i<n;i++)

cin>>a[i];

for(i=0;i<n;i++){

if(max<a[i])

max=a[i];

}

for(i=0;i<n;i++){

if(a[i]!=max){

s++;

}

else{

temp++;

if(temp==1){

p=s;

s=0;

}

else{

t=s-(n/2)+1;

if(t>0)

res+=t;

s=0;

}

}

}

s+=p;

t=s-(n/2)+1;

if(t>0)

res+=t;

cout<<res<<endl;

res=0;s=0;

max=-1;

temp=0;

}

}

## **Chef and Time Machine**

#include <iostream>

#include <algorithm>

using namespace std;

int main() {

int t;

cin>>t;

while(t--){

int n,k,m;

cin>>n>>k>>m;

int A[n];

int B[n];

int C[k+m];

for(int i = 0 ; i < n ; i++)

cin>>A[i];

for(int i = 0 ; i < n ; i++){

cin>>B[i];

A[i]-=B[i];

}

for(int i = 0 ; i < k+m ; i++)

cin>>C[i];

sort(A , A+n);

sort(C , C+k+m);

int p1 = n-1;

int p2 = k+m-1;

while(p1>=0 && p2>=0){

if(A[p1]>=C[p2]){

A[p1]-=C[p2];

p1--;

p2--;

}

else{

p2--;

}

}

int res=0;

for(int i = 0 ; i < n ; i++){

res+=A[i];

}

cout<<res<<endl;

}

return 0;

}

## **Making A Meal**

#include <bits/stdc++.h>

using namespace std;

int main() {

int t;

cin>>t;

while(t--){

int n;

cin>>n;

map<char,int>m;

for(int i=0;i<n;i++){

string s;

cin>>s;

for(char a:s){

m[a]++;

}

}

cout<<min({m['c']/2,m['o'],m['d'],m['e']/2,m['f'],m['h'],m['f']})<<endl;

}

return 0;

}

## **Minions and Voting**

#include<bits/stdc++.h>

using namespace std;

int a[100005], m[100005];

int main () {

int n, s1, s2, t;

cin >> t;

while (t--) {

cin >> n;

for (int i = 0; i < n; i++) {

cin >> a[i];

m[i] = 0;

}

for (int i = 0; i < n; i++) {

s1 = 0;

for (int j = i + 1; j < n; j++) {

if (a[i] >= s1) {

m[j]++;

s1 += a[j];

}

else break;

}

s2 = 0;

for (int k = i - 1; k >= 0; k--) {

if (a[i] >= s2) {

m[k]++;

s2 += a[k];

}

else break;

}

}

for (int i = 0; i < n; i++) cout << m[i] << " ";

cout << endl;

}

}

## **Testing Robot**

#include<bits/stdc++.h>

using namespace std;

int main(){

int t;

cin>>t;

while(t--){

int n,x;

cin>>n>>x;

string s;

cin>>s;

int a[100];

a[0]=x;

int u=1,c=1;

for(int i=0;i<n;i++){

if(s[i]=='R'){

x=x+1;

}

else

x=x-1;

int p=0;

for(int j=0;j<u;j++){

if(x==a[j])

p++;

}

if(p==0){

a[u]=x;

u++;

}

}

cout<<u<<endl;

}

}

## **Wordle**

#include <iostream>

using namespace std;

int main() {

int t;

cin>>t;

while(t--){

string s, t;

cin>>s;

cin>>t;

for(int i=0; i<5; i++){

if(s[i] == t[i])

t[i] = 'G';

else

t[i] = 'B';

}

cout<<t<<endl;

}

return 0;

}

## **Compress the Video**

#include <iostream>

using namespace std;

int main() {

int t;

cin>>t;

while(t--)

{

int n,frames;

cin>>n;

frames=n;

int a[n];

for(int i=0;i<n;i++)

{

cin>>a[i];;

}

for(int i=0;i<n-1;i++)

{

if(a[i]==a[i+1])

{

frames--;

}

}

cout<<frames<<endl;

}

return 0;

}

## **Sort the String**

#include <iostream>

using namespace std;

int main() {

int t;

cin>>t;

while(t--){

int n, ans = 0;

cin>>n;

string str;

cin>>str;

for(int i=0; i<n; i++){

if(str[i]=='1' && str[i+1]=='0')

ans++;

}

cout<<ans<<endl;

}

return 0;

}

## **Substring of a Substring**

#include <iostream>

using namespace std;

int main() {

int t;

cin>>t;

while(t--){

string s;

cin>>s;

if(s.length()<=2)

cout<<-1;

else{

int c=0, p=0;

for(int i=1;i<s.length()-1;i++) {

if(s[i]!=s[0]&&s[i]!=s[s.length()-1]){

c++;

p=max(p,c);

}

else{

p=max(p,c);

c=0;

}

}

if(p==0)

cout<<-1;

else

cout<<p;

}

cout<<endl;

}

return 0;

}

## **Daily Train**

#include <bits/stdc++.h>

using namespace std;

int comb(int, int);

int fact(int);

int main() {

int X,N;

cin>>X>>N;

int tics=0;

while(N--){

string s;

cin>>s;

int i=0;

int j=0;

int n=1;

while(n<10){

string str;

for(;i<4\*n;i++){

str+=s[i];

}

for(;j<2\*n;j++){

str+=s[53-j];

}

int cnt=0;

for(int k=0;k<6;k++){

if(str[k]=='0')

cnt++;

}

if(cnt>=X)

tics+=comb(cnt,X);

n++;

}

}

cout<<tics<<endl;

return 0;

}

int comb(int a, int b){

int c;

c=fact(a)/(fact(b)\*fact(a-b));

return c;

}

int fact(int a){

int f=1;

while(a>=1){

f\*=a;

a--;

}

return f;

}

## **First and Last Digit**

#include<bits/stdc++.h>

using namespace std;

int main()

{

int t;

cin>>t;

while(t--)

{

int n;

cin>>n;

int rem = n%10;

while(n>9)

{

n = n/10;

}

cout<<n+rem<<endl;

}

return 0;

}

## **Odd Sum Pair**

#include <iostream>

using namespace std;

int main() {

int t;

cin>>t;

while(t--){

int a, b, c;

cin>>a>>b>>c;

int rem1 = a%2;

int rem2 = b%2;

int rem3 = c%2;

if((rem1==1 && rem2==1 && rem3==1) || (rem1==0 && rem2==0 && rem3==0))

cout<<"NO"<<endl;

else

cout<<"YES"<<endl;

}

return 0;

}

## **Police and Thief**

#include <iostream>

using namespace std;

int main() {

int t;

cin>>t;

while(t--){

int x, y;

cin>>x>>y;

if(x>=y)

cout<<x-y<<endl;

else

cout<<y-x<<endl;

}

return 0;

}

## **Reach the Target**

#include <iostream>

using namespace std;

int main() {

int t;

cin>>t;

while(t--){

int x, y;

cin>>y>>x;

cout<<y-x<<endl;

}

return 0;

}

## **Car Trip**

#include <iostream>

using namespace std;

int main() {

int t;

cin>>t;

while(t--){

int x;

cin>>x;

if(x<=300)

cout<<3000<<endl;

else

cout<<x\*10<<endl;

}

return 0;

}

## **Waiting Time**

#include <iostream>

using namespace std;

int main() {

int t;

cin>>t;

while(t--){

int k, x;

cin>>k>>x;

cout<<k\*7-x<<endl;

}

return 0;

}

## **Flip the Cards**

#include <iostream>

using namespace std;

int main() {

int t;

cin>>t;

while(t--){

int n, x;

cin>>n>>x;

int y = n - x;

if(x<y)

cout<<x<<endl;

else

cout<<y<<endl;

}

return 0;

}

## **Prime Generator**

#include <bits/stdc++.h>

using namespace std;

bool prime(int n){

for(int i=2; i<=sqrt(n); i++){

if(n%i == 0)

return false;

}

return true;

}

int main() {

int t;

cin>>t;

while(t--){

int m, n;

cin>>m>>n;

for(int i=m; i<=n; i++){

if(i == 1)

continue;

if(prime(i))

cout<<i<<endl;

}

}

return 0;

}

## **Two Different Palindromes**

#include <iostream>

using namespace std;

int main() {

int t;

cin>>t;

while(t--){

int a, b;

cin>>a>>b;

if(a == 1 || b == 1)

cout<<"No"<<endl;

else if(a%2 == 0 || b%2 == 0)

cout<<"Yes"<<endl;

else

cout<<"No"<<endl;

}

return 0;

}

## **Vaccine Distribution**

#include <iostream>

using namespace std;

int main() {

int t;

cin>>t;

while(t--){

int n, d, count=0;

cin>>n>>d;

int a[n];

for(int i=0; i<n; i++){

cin>>a[i];

if(a[i] >= 80 || a[i] <= 9)

count++;

}

cout<<(count+d-1)/d + (n-count+d-1)/d<<endl;

}

return 0;

}

## **From Heaven to Earth**

#include <iostream>

#include<math.h>

using namespace std;

int main() {

int t;

cin>>t;

while(t--){

int n, v1, v2;

cin>>n>>v1>>v2;

double stairs = (n\*sqrt(2)) / v1;

double ele = (n\*2.0) / v2;

if(stairs > ele)

cout<<"Elevator"<<endl;

else

cout<<"Stairs"<<endl;

}

return 0;

}