**1.Toffee Problem**

#include <cmath>

#include <cstdio>

#include <vector>

#include <iostream>

#include <algorithm>

using namespace std;

int main() {

int tof,rup;

cin>>tof>>rup;

int t[tof];

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

cin>>t[i];

sort(t,t+tof);

int max=0;

if(rup<t[0]){

cout<<max;

return 0;

}

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

rup=rup-t[i];

if(rup>=0)

max++;

else

break;

}

cout<<max;

return 0;

}

**2.Button Factory**

#include <cmath>

#include <cstdio>

#include <vector>

#include <iostream>

#include <algorithm>

using namespace std;

int main() {

int p,q,r,s;

cin>>p>>q>>r>>s;

int x=max(p,r);

int y=min(q,s);

int time=y-x;

if(time<0)

cout<<"0";

else

cout<<time;

return 0;

}

**3.Lazy Lad**

#include <cmath>

#include <cstdio>

#include <vector>

#include <iostream>

#include <algorithm>

using namespace std;

int main() {

long long q;

cin>>q;

long long box[q];

for(long long i=0;i<q;i++)

cin>>box[i];

for(long long i=0;i<q;i++){

long long row=(sqrt((8\*box[i])+1)-1)/2;

cout<<row<<endl;

}

return 0;

}

4.HarshPrime

#include <cmath>

#include <cstdio>

#include <vector>

#include <iostream>

#include <algorithm>

using namespace std;

int main() {

int n,x,a=0;

cin>>n>>x;

vector<int>p;

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

int flag=0;

for(int j=2;j<=sqrt(i);j++)

{ if(i%j==0)

{flag=1 ;

break;}}

if(flag==0)

p.push\_back(i);}

int s=p.size();

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

{ int k=(p[i]+p[i+1]+1);

auto it=find(p.begin(),p.end(),k);

if(it!=p.end())

a++;

}

if(a>=x)

cout<<"YES\n";

else

cout<<"NO\n";

return 0;

}