

WORKSHEET 1

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Branch: CSE

Section: DWWC - 43

1. Fire and Ice

Program Code:

```
#include <stdio.h> #include<inttypes.h> void multiply(uint64_t
F[2][2], uint64_t M[2][2],uint64_t k); void power(uint64_t
F[2][2], uint64_t n,uint64_t k); uint64_t fib(uint64_t n,uint64_t
k)
{
    uint64_t F[2][2] = {{1,1},{1,0}};
    if (n == 0)
return 0; power(F,
n-1,k); return
F[0][0];
}
void power(uint64_t F[2][2], uint64_t n,uint64_t k)
{
    if( n == 0 || n == 1)
        return;
    uint64_t M[2][2] = {{1,1},{1,0}}; power(F,
n/2,k); multiply(F, F,k); if
(n%2 != 0) multiply(F, M, k);
}
void multiply(uint64_t F[2][2], uint64_t M[2][2],uint64_t k)
{
    uint64_t x = (F[0][0]*M[0][0] +
```

```
F[0][1]*M[1][0])%k; uint64_t y = (F[0][0]*M[0][1] +
F[0][1]*M[1][1])%k; uint64_t z = (F[1][0]*M[0][0] +
F[1][1]*M[1][0])%k; uint64_t w = (F[1][0]*M[0][1]
+ F[1][1]*M[1][1])%k;
F[0][0] = x;
F[0][1] = y;
F[1][0] = z;
F[1][1] = w;
} int main() {
uint64_t n,k,t;
scanf("%llu",&t);
while(t--)
{
scanf("%llu",&n); scanf("%llu",&k);
printf("%llu\n", (2*fib(n,k))%k);
} return
0;
}
```

Output:

Subtask Info			
Status: ✓ Correct Answer			Submission ID: 84133293
Score: 100	Time: 0.58s	Memory: 5.2M	
Sub-Task	Task #	Result (Time)	
1	0	AC (0.323406)	
Subtask Score: 10.00%			Result: AC
2	1	AC (0.559455)	
Subtask Score: 30.00%			Result: AC
3	2	AC (0.578790)	
Subtask Score: 60.00%			Result: AC
Total Score = 100.00%			

2. Gold Mining

Program Code:

```
#include <iostream> using namespace
std; int main()
{
int t;
scanf("%d", &t); while(t--)
{
int n, x, y;
scanf("%d %d %d", &n, &x, &y);

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

if(sum<x)
{
printf("NO\n");
} else
{
printf("YES\n");
}
} return
0;
}
```

Output

Subtask Info		
Status: ✓ Correct Answer		Submission ID: MT33668
Score: 100	Time: 0.00s	Memory: 5.2M
Sub-Task	Task #	Result (time)
1	1	AC (0.004081s)
2	2	AC (0.004373s)
3	3	AC (0.004426s)
Subtask Score: 100.00%		Result: AC
Total Score: 100.00%		

3. The Lead Game

Program Code:

```
#include<bits/stdc++.h>
using namespace std; typedef
long long int lli; int main(){
int t,S=0,T=0; cin>>t;
vector<int> v; while(t--){
int s,t;
cin>>s>>t;
S+=s; T+=t;
v.push_back(S-T);
}
int max=-1,win; for(int
i:v){ if(abs(i)>max){
max=abs(i); if(i>0)
win = 1;
else win = 2;
} }
cout<<win<<' '<<max;
}
```

Subtask Info

Status: ✓ Correct Answer

Time:
0.00s

Memory:
5.2M

4. Sums in a triangle


4) Binod and Chocolate:-

```
#include<bits/stdc++.h>
using namespace std;
int main(){
    int i,j,t,n; cin>>t; while(t--){
        cin>>n; int a[n][n];
        for(int i=0;i<n;i++){
            for(j=0;j<=i;j++){
                cin>>a[i][j];
            }
        }
        for(int i=n-2;i>=0;i--){
            for(j=0;j<=i;j++){
                if((a[i][j]+a[i+1][j])>(a[i][j]+a[i+1][j+1]))
                    a[i][j]=a[i][j]+a[i+1][j];
                else
                    a[i][j]=a[i][j]+a[i+1][j+1];
            }
        }
    }
}
```

```
        cout<<a[0][0]<<endl;
    }
    return 0;
}
```

Output

Subtask Info

Status:  Correct Answer

Time:
0.11s

Memory:
5M

```
    }
}
```

5. Small Factorials

Program Code:

```
#include <bits/stdc++.h>
#include
<boost/multiprecision/cpp_int.hpp> #include
<iostream> using namespace std; using
namespace boost::multiprecision;
```

```
int main() { // your
code goes here  int
t; cin>>t; while(t-
-) {    int n;
cin>>n;    cpp_int
fact=1;    for(int
i=n;i>0;i--)
fact=fact*i;
```

Output

Subtask Info

Status: ✓ Correct Answer

Time:	Memory:
0.00s	5.3M

```
cout<<fact<<endl;
}    return
0; } ;
```

```
1 #include <iostream>
2 using namespace std;
3
4 int main() {
5     int n,i;
6     int a,b;
7     cin>>a>>b;
8
9
10    if(a==0 and (b==0 or (b==1))) {
11        cout<<"https://www.codechef.com/practice"<<endl;}
12    else if(a==1 and b==0){
13        cout<<"https://www.codechef.com/contests"<<endl;}
14    else{
15        cout<<"https://discuss.codechef.com"<<endl;}
16
17    return 0;
18 }
19
```

Test against Custom Input



0 1

Problem Solver Badge

49 / 50



Next Problem

Solve 1 more problem to get Bronze Badge

Status:  Correct Answer

Submission ID: [84131231](#)

Time: