

WORKSHEET 1

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Branch: CSE

Section: 903-A MM

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;
}

```

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 (0.578799)
Subtask Score: 60.00%		Result: AC
Total Score = 100.00%		

Output:

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: BM133668
Score: 100	Time: 0.00s	Memory: 5.2M	
Sub.Task	Task #	Result (time)	
✓	1	AC (0.004081)	
✓	2	AC (0.004373)	
✓	3	AC (0.004426)	
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;
}
```

Output

Program Code:

Subtask Info

Status: ✓ Correct Answer

Time:
0.00s

Memory:
5.2M


4. Sums in a triangle

```
#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:	Memory:
0.11s	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;  
cout<<fact<<endl;  
}  
return 0; }
```

Output

Subtask Info

Status:  Correct Answer

Time:
0.00s

Memory:
5.3M

K


```
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

Solve 1 more problem to get Bronze Badge



Next Problem

Status:  Correct Answer

Submission ID: [84131231](#)

Time: