

混合牛奶 Mixing Milk

人员

郭栩睿、洪晨栋、洪晨棋、徐本正、张曦月、李沛都、王静嘉 到课, 陶汇笙、罗启宸 线上

作业检查

上周作业链接: <https://www.luogu.com.cn/contest/226027>

名次	参赛者	总分	A	B	C	D	E	F	G
#1	陶汇笙	700 (4.75d)	100 (33.90min)	100 (51.90min)	100 (1.04h)	100 (1.50h)	100 (1.81h)	100 (2.00h)	100 (4.43d)
#2	郭栩睿	700 (12.77d)	100 (30.42min)	100 (37.68min)	100 (51.88min)	100 (1.89h)	100 (4.36d)	100 (1.29d)	100 (6.96d)
#3	洪晨栋	700 (15.86d)	100 (22.10min)	100 (31.58min)	100 (47.58min)	100 (1.92h)	100 (4.40d)	100 (6.92d)	100 (4.38d)
#4	洪晨棋	700 (21.03d)	100 (36.38min)	100 (48.27min)	100 (1.24h)	100 (1.94h)	100 (6.94d)	100 (6.97d)	100 (6.92d)
#5	崔宸赫	400 (4.87h)	100 (44.30min)	100 (1.03h)	100 (1.26h)	100 (1.84h)			
#6	邹忆航	400 (4.97h)	100 (40.73min)	100 (56.70min)	100 (1.40h)	100 (1.95h)			
#7	李沛都	400 (17.83d)	100 (2.32d)	100 (5.15d)	100 (5.16d)	100 (5.20d)			
#8	王恩泽	300 (2.26h)	100 (20.58min)	100 (48.87min)	100 (1.10h)				
#9	罗启宸	100 (27.80min)	100 (27.80min)						

作业

<https://www.luogu.com.cn/contest/228186> (课上讲了 A~F 6 个题, 课后作业是 G 题)

课堂表现

今天大部分同学上课听讲做题表现都很不错, 对同学们提出表扬!!

课堂内容

P2241 统计方形的数量 (数据加强版)

```
#include <bits/stdc++.h>

using namespace std;

typedef long long LL;

int main()
{
    int n, m; cin >> n >> m;
    LL sum1 = 0, sum2 = 0;
    for (int i = 1; i <= n; ++i) {
```

```
    for (int j = 1; j <= m; ++j) {
        sum1 += min(i,j);
        sum2 += i*j;
    }
}
cout << sum1 << " " << sum2-sum1 << endl;
return 0;
}
```

P1146 硬币翻转

```
#include <bits/stdc++.h>

using namespace std;

const int maxn = 100 + 5;
char s[maxn];

int main()
{
    int n; cin >> n;
    for (int i = 1; i <= n; ++i) s[i] = '0';

    cout << n << endl;
    for (int i = 1; i <= n; ++i) {
        for (int j = 1; j <= n; ++j) {
            if (j == i) continue;
            if (s[j] == '0') s[j] = '1';
            else s[j] = '0';
        }
        cout << (s+1) << endl;
    }
    return 0;
}
```

P1867 【Mc生存】经验值

```
#include <bits/stdc++.h>

using namespace std;

int main()
{
    int n, res = 0;
    double hp = 10;
    cin >> n;
    for (int i = 1; i <= n; ++i) {
        double x;
```

```

    int a;
    cin >> x >> a;
    hp -= x;
    if (hp > 10) hp = 10;
    if (hp > 0) res += a;
    if (hp <= 0 || i == n) {
        for (int j = 1, k = 1; ; j *= 2, k++) {
            if (res >= j) res -= j;
            else {
                cout << k - 1 << " " << res << endl;
                break;
            }
        }
        break;
    }
}
return 0;
}

```

P2550 [AHOI2001] 彩票摇奖

```

#include <bits/stdc++.h>

using namespace std;

int cnt[40];
int f[10];

int main()
{
    int n;
    cin >> n;
    for (int i = 1; i <= 7; i++) {
        int x; cin >> x;
        cnt[x]++;
    }

    for (int i = 1; i <= n; i++) {
        int sum = 0;
        for (int j = 1; j <= 7; j++) {
            int x; cin >> x;
            if (cnt[x] > 0) {
                sum++;
            }
        }
        // sum: 0, 1, 2, 3, 4, 5, 6, 7
        f[sum]++;
    }

    for (int i = 7; i >= 1; i--) {
        cout << f[i] << " ";
    }
}

```

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

P1208 [USACO1.3] 混合牛奶 Mixing Milk

```
#include <bits/stdc++.h>  
  
using namespace std;  
  
const int maxn = 5000 + 5;  
struct node {  
    int p, a;  
} w[maxn];  
  
bool cmp(node x, node y) { return x.p < y.p; }  
  
int main()  
{  
    int n, m; cin >> n >> m;  
    for (int i = 1; i <= m; ++i) cin >> w[i].p >> w[i].a;  
    sort(w+1, w+m+1, cmp);  
  
    int res = 0;  
    for (int i = 1; i <= m; ++i) {  
        if (n >= w[i].a) res += w[i].p*w[i].a, n -= w[i].a;  
        else {  
            res += n*w[i].p;  
            break;  
        }  
    }  
    cout << res << endl;  
    return 0;  
}
```

P1012 [NOIP1998 提高组] 拼数

```
#include <bits/stdc++.h>  
  
using namespace std;  
  
string str[25];  
  
bool cmp(string a, string b) {  
    return (a+b) > (b+a);  
}
```

```
int main()
{
    int n; cin >> n;
    for (int i = 1; i <= n; ++i) cin >> str[i];
    sort(str+1, str+n+1, cmp);
    for (int i = 1; i <= n; ++i) cout << str[i];
    cout << endl;
    return 0;
}
```