

# 杂题混练

## 人员

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## 上周作业检查

Begin: 2025-01-11 08:30 CST

☆👥 2025-0111 ~ 0112 三队上课

End: 2025-05-16 08:30 CST

Elapsed: 7:00:27:33

Running

Remaining: 117:23:32:26

OverviewProblemStatusRank (7:00:27:25)DiscussSettingCloneUpdateDelete

Rank	Team	Score	Penalty	A	B	C	D	E	F
				9 / 19	7 / 10	4 / 6	3 / 10	1 / 1	1 / 2
1	☆👤 syh123bc (L_FL_)	6	25:22:11:12	3:03:41:23	3:09:35:16	3:04:00:39	5:05:13:30 (-1)	5:08:49:58	5:14:10:26 (-1)
2	☆👤 syzxiangyuhan (梁钰...)	4	4:22:05:44	0:57:26 (-1)	1:54:48	3:57:58	4:13:15:32 (-5)		
3	☆👤 ssine233 (穆鹏宇)	4	6:04:51:15	9:12:43 (-2)	1:57:21	2:04:36:22	3:12:24:49		
4	☆👤 huhexuan (胡赫轩)	3	9:13:54:42	5:01:33:21	10:53:55	4:01:27:26			
5	☆👤 yujiahao (Pswd com...)	2	2:13:04:07	1:06:09:13	1:06:54:54				
6	☆👤 Cui2011 (崔嘉睿)	2	6:13:57:05	1:14:40 (-3)	6:11:42:25	(-2)	(-1)		
7	☆👤 Zheng_iii (郑岩泽)	2	6:20:16:02	3:09:54:58	3:10:21:04				
8	☆👤 caiyunxiang (蔡云翔)	1	1:08:22	1:08:22					
9	☆👤 Cst_AK_IOI (程晟泰)	1	1:12:58:49	1:12:18:49 (-2)	(-2)				
10	☆👤 James00123 (杨洋)	0	0:00:00	(-2)	(-1)				

## 作业

https://vjudge.net/contest/686631

## 课堂表现

今天的题目整体不是很难, 大家课上没做完的题目, 课下要好好复习一下。

## 课堂内容

### CF19B Checkout Assistant

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

using namespace std;

typedef long long LL;
```

```

const int maxn = 2000 + 5;
const LL inf = 0x3f3f3f3f3f3f3f3f;
LL f[2*maxn];

int main()
{
    int n; cin >> n;
    memset(f, 0x3f, sizeof(f)); f[0] = 0;
    for (int j = 1; j <= n; j++) {
        int t, c; cin >> t >> c; ++t;
        for (int i = 2*maxn-1; i >= t; --i) f[i] = min(f[i], f[i-t]+c);
    }

    LL res = inf;
    for (int i = 2*maxn-1; i >= n; --i) res = min(res, f[i]);
    cout << res << endl;
    return 0;
}

```

### CF746F Music in Car

```

#include <bits/stdc++.h>

using namespace std;

const int maxn = 2e5 + 5;
int a[maxn], t[maxn];

int value(int a) { return (a+1)/2; }

int main()
{
    int n, w, k; cin >> n >> w >> k;
    for (int i = 1; i <= n; ++i) cin >> a[i];
    for (int i = 1; i <= n; ++i) cin >> t[i];

    multiset<int> s1, s2;
    int sum = 0, tot = 0, res = 0;
    for (int l = 1, r = 1; r <= n; ++r) {
        if ((int)s1.size() < w) s1.insert(t[r]), sum += value(t[r]);
        else {
            int temp = *s1.begin();
            if (temp >= t[r]) s2.insert(t[r]), sum += t[r];
            else {
                s1.erase(s1.find(temp)), sum -= value(temp);
                s2.insert(temp), sum += temp;
                s1.insert(t[r]), sum += value(t[r]);
            }
        }
        tot += a[r];
    }
}

```

```

while (sum > k) {
    if (s2.count(t[l])) s2.erase(s2.find(t[l])), sum -= t[l];
    else {
        s1.erase(s1.find(t[l])), sum -= value(t[l]);
        if (!s2.empty()) {
            int temp = *s2.rbegin();
            s2.erase(s2.find(temp)), sum -= temp;
            s1.insert(temp), sum += value(temp);
        }
    }
    tot -= a[l]; l++;
}

res = max(res, tot);
}
cout << res << endl;
return 0;
}

```

### CF1606E Arena

```

#include <bits/stdc++.h>

using namespace std;

typedef long long LL;
const int maxn = 500 + 5;
const int mod = 998244353;
int f[maxn][maxn], C[maxn][maxn];

int qmod(int a, int k) {
    int res = 1;
    while (k) {
        if (k&1) res = 1LL*res*a%mod;
        a = 1LL*a*a%mod;
        k >>= 1;
    }
    return res;
}

int main()
{
    int n, m; cin >> n >> m;
    for (int i = 0; i <= n; ++i) {
        for (int j = 0; j <= i; ++j) {
            if (!j) C[i][j] = 1;
            else C[i][j] = (C[i-1][j-1] + C[i-1][j]) % mod;
        }
    }

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

```

```

for (int j = 1; j <= m; ++j) {
    if (j <= i-1) f[i][j] = (qmod(j,i) - qmod(j-1,i) + mod) % mod;
    else {
        int res = 0;
        for (int k = 2; k <= i; ++k) {
            res += 1LL*C[i][k]*f[k][j-i+1]%mod*qmod(i-1,i-k)%mod;
            res %= mod;
        }
        f[i][j] = res;
    }
}

int res = 0;
for (int i = 1; i <= m; ++i) res = (res + f[n][i]) % mod;
cout << res << endl;
return 0;
}

```

### CF1513D GCD and MST

```

#include <bits/stdc++.h>

using namespace std;

typedef long long LL;
const int maxn = 2e5 + 5;
int w[maxn];
struct node {
    int val, id;
    bool operator < (const node& p) const { return val < p.val; }
} a[maxn];
bool f[maxn];

void solve() {
    int n, p; cin >> n >> p;
    for (int i = 0; i <= n+2; ++i) f[i] = false;
    for (int i = 1; i <= n; ++i) cin >> w[i], a[i] = {w[i], i};
    sort(a+1, a+n+1);

    LL res = 0, cnt = n-1;
    for (int i = 1; i <= n; ++i) {
        int val = a[i].val, id = a[i].id;
        if (val >= p) break;
        if (f[id]) continue;

        for (int j = id-1; j >= 1; --j) {
            if (f[j] || w[j]%val!=0) break;
            f[j] = true; --cnt; res += val;
        }
        for (int j = id+1; j <= n; ++j) {

```

```
        if (f[j-1] || w[j]%val!=0) break;
        f[j-1] = true; --cnt; res += val;
    }
}
res += 1LL*cnt*p;

// cout << "----- ";
cout << res << endl;
}

int main()
{
    int T; cin >> T;
    while (T -- ) solve();
    return 0;
}
```