

Олимпиада «Ломоносов» по информатике
2025-2026 учебный год. Заключительный этап
Работа участника с id заявки 1629948, логином inf26f_190

Сводный итог по всем задачам в проверяющей системе

Run ID	Time	User name	Problem	Language	Result	Tests	Score
1289	3:56:59	inf26f_190	7	g++	Partial solution	1	0
1040	3:34:13	inf26f_190	1	python3	OK	23	100
606	2:21:33	inf26f_190	6	g++	Partial solution	6	25
499	2:01:10	inf26f_190	3	g++	OK	23	100
296	1:14:38	inf26f_190	2	clang++	Partial solution	51	96
136	0:46:50	inf26f_190	5	g++	OK	103	100
24	0:20:06	inf26f_190	4	g++	OK	103	100

521 (пятьсот двадцать один) технический балл
74 (семьдесят четыре) итоговых балла



председатель Жюри кандидат физ.-мат. наук Малышко В. В.



зам. председателя Жюри кандидат физ.-мат. наук Корныхин Е. В.

Посылка по задаче 1

```
[1] def decode(s):
[2]     if s == 'N':
[3]         return 0
[4]     n = len(s)
[5]     used = [-1] * n
[6]     pl = []
[7]     px = []
[8]     pv = []
[9]     for i in range(n):
[10]        if s[i] == 'L':
[11]            pl.append(i)
[12]        elif s[i] == 'X':
[13]            px.append(i)
[14]        elif s[i] == 'V':
[15]            pv.append(i)
[16]
[17]     for p in pv:
[18]         val = 5
[19]         used[p] = 0
[20]         bas = False
[21]         for i in range(1, 6):
[22]             j = p - i
[23]             if j >= 0 and s[j] == 'I' and used[j] == -1:
[24]                 val -= 1
[25]                 used[j] = 0
[26]                 bas = True
[27]             else:
[28]                 break
[29]         if bas:
[30]             used[p] = val
[31]         else:
[32]             used[p] = -1
[33]
[34]     for p in px:
[35]         val = 10
[36]         used[p] = 0
[37]         bas = False
[38]         for i in range(1, 11):
[39]             j = p - i
[40]             if j >= 0 and s[j] == 'I' and used[j] == -1:
[41]                 val -= 1
[42]                 used[j] = 0
[43]                 bas = True
[44]             else:
[45]                 break
[46]         if bas:
[47]             used[p] = val
[48]         else:
[49]             used[p] = -1
[50]
[51]     for p in pl:
[52]         val = 50
[53]         used[p] = 0
[54]         bas = False
[55]         for i in range(1, 6):
[56]             j = p - i
[57]             if j >= 0 and s[j] == 'X' and used[j] == -1:
[58]                 val -= 10
[59]                 used[j] = 0
[60]                 bas = True
[61]             else:
[62]                 break
[63]         if bas:
[64]             used[p] = val
[65]         else:
[66]             used[p] = -1
[67]
[68]     res = 0
[69]     for i in range(n):
[70]         if used[i] != -1:
[71]             res += used[i]
[72]         else:
[73]             if s[i] == 'I':
[74]                 res += 1
[75]             elif s[i] == 'V':
```

```

[76]             res += 5
[77]             elif s[i] == 'X':
[78]                 res += 10
[79]             else:
[80]                 res += 50
[81]         return res
[82]
[83]
[84] k = int(input())
[85]
[86] mina = [9] * 500
[87] maxa = [0] * 1
[88] for _ in range(k):
[89]     t = input()
[90]     a = t.split('.')
[91]     b = []
[92]     for s in a:
[93]         b.append(int(decode(s)))
[94]     l = len(b)
[95]     lmina = len(mina)
[96]     lmaxa = len(maxa)
[97]     if l == lmina:
[98]         mina = min(mina, b)
[99]     if l == lmaxa:
[100]        maxa = max(maxa, b)
[101]     if l < lmina:
[102]         mina = b
[103]     if l > lmaxa:
[104]         maxa = b
[105]
[106] d = dict()
[107] for i in range(26):
[108]     d[i] = chr(ord('A') + i)
[109]     d[26 + i] = chr(ord('a') + i)
[110]
[111] for i in mina:
[112]     print(d[i], end='')
[113] print()
[114] for i in maxa:
[115]     print(d[i], end='')

```

Посылка по задаче 2

```
[1] #include <iostream>
[2] #include <algorithm>
[3] #include <map>
[4] #include <unordered_map>
[5] #include <set>
[6] #include <numeric>
[7] #include <vector>
[8] #include <cmath>
[9] using namespace std;
[10] using ll = long long;
[11] using ld = long double;
[12] using vll = vector<ll>;
[13] using vb = vector<bool>;
[14] using vvll = vector<vll>;
[15] using pll = pair<ll, ll>;
[16] using vp11 = vector<pll>;
[17] #define all(a) a.begin(), a.end()
[18]
[19] set<ll> s;
[20]
[21] void solve(){
[22]     ll n; cin >> n;
[23]     vll a(n);
[24]     for (ll&i:a) cin >> i;
[25]     ll N = (*max_element(all(a))) + 5;
[26]     vb pr(N, 1);
[27]     pr[0] = pr[1] = 0;
[28]     for (ll i = 2; i < N; ++i){
[29]         if (!pr[i]) continue;
[30]         for (ll j = i * i; j < N; j += i){
[31]             pr[j] = 0;
[32]         }
[33]     }
[34]     ll r = 1;
[35]     for (ll b = 2; b <= N; ++b){
[36]         ll p = 1;
[37]         for (ll k = 1; ; ++k){
[38]             p*=b;
[39]             ll cur = (p - 1) / (b - 1);
[40]             if (cur >= N) break;
[41]             if (pr[cur]) s.insert(cur);
[42]         }
[43]     }
[44]     map<ll,ll> cnt;
[45]     for (ll i = 0; i<n;++i){
[46]         if (s.find(a[i]) != s.end()) cnt[a[i]]++;
[47]     }
[48]     ll ansval = 0;
[49]     ll ansk = 0;
[50]     for (auto&[val, k]: cnt){
[51]         if (k >= ansk){
[52]             ansk = k;
[53]             ansval = max(ansval, val);
[54]         }
[55]     }
[56]     cout << ansval;
[57] }
[58]
[59] int main(){
[60]     ios::sync_with_stdio(0); cin.tie(0);
[61]     ll tt = 1;
[62]     //cin >> tt;
[63]     while(tt--) solve();
[64] }
```

Посылка по задаче 3

```
[1] #include <iostream>
[2] #include <algorithm>
[3] #include <map>
[4] #include <unordered_map>
[5] #include <set>
[6] #include <numeric>
[7] #include <vector>
[8] #include <cmath>
[9] using namespace std;
[10] using ll = long long;
[11] using ld = long double;
[12] using vll = vector<ll>;
[13] using vb = vector<bool>;
[14] using vvll = vector<vll>;
[15] using pll = pair<ll, ll>;
[16] using vp11 = vector<pll>;
[17] #define all(a) a.begin(), a.end()
[18]
[19] bool in(ll x, ll l, ll r){
[20]     return l<=x && x<=r;
[21] }
[22]
[23] ll kth(ll n, ll i, ll j){
[24]
[25] }
[26]
[27] ll ask(ll n, ll i, ll j){
[28]     --i, --j;
[29]     ll m = 0, n0 = n;
[30]     ll l = 0, r = n - 1, i0 = i, j0 = j;
[31]     while(in(i0, l + 1, r - 1) && in(j0, l + 1, r - 1)){
[32]         ++l, --r;
[33]         ll x = 4*n - 4;
[34]         n-=2;
[35]         --i, --j;
[36]         m += x;
[37]     }
[38]     if (j == 0){
[39]         return m + i;
[40]     }
[41]     if (i == n - 1){
[42]         return m + n + j - 1;
[43]     }
[44]     if (j == n - 1){
[45]         return m + n + j + n - i - 2;
[46]     }
[47]     if (i == 0){
[48]         return m + 3 * (n - 1) + (n - j - 1);
[49]         return m + n + j + n - i - 2 + n - j;
[50]     }
[51] }
[52]
[53] void solve(){
[54]     ll n, i, j; cin >> n>>i>>j;
[55]     swap(i, j);
[56]     cout << ask(n, i, j); return;
[57]     for (ll i1 = 0; i1<n;++i1){
[58]         for (ll j1 = 0; j1<n;++j1){
[59]             cout << ask(n, i1+1, j1+1) << ' ';
[60]         }
[61]         cout << '\n';
[62]     }
[63] }
[64]
[65] int main(){
[66]     ios::sync_with_stdio(0); cin.tie(0);
[67]     ll tt = 1;
[68]     //cin >> tt;
[69]     while(tt-->0) solve();
[70] }
```

Посылка по задаче 4

```
[1] #include <iostream>
[2] #include <algorithm>
[3] #include <map>
[4] #include <unordered_map>
[5] #include <set>
[6] #include <numeric>
[7] #include <vector>
[8] using namespace std;
[9] using ll = long long;
[10] using ld = long double;
[11] using vll = vector<ll>;
[12] using pll = pair<ll, ll>;
[13] using vpll = vector<pll>;
[14] #define all(a) a.begin(), a.end()
[15]
[16] void solve(){
[17]     ll n; cin >> n;
[18]     vll a(n);
[19]     for (ll&i:a) cin >> i;
[20]     reverse(all(a));
[21]     vll c(n + 1, 1e18);
[22]     c[0] = -1e18;
[23]     for (ll&x:a){
[24]         ll& val = c[upper_bound(all(c), x) - c.begin()];
[25]         if (x < val) val = x;
[26]     }
[27]     cout << count(c.begin(), c.end(), 1e18);
[28] }
[29]
[30] int main(){
[31]     ios::sync_with_stdio(0); cin.tie(0);
[32]     ll tt = 1;
[33]     //cin >> tt;
[34]     while(tt--) solve();
[35] }
```

Посылка по задаче 5

```
[1] #include <iostream>
[2] #include <algorithm>
[3] #include <map>
[4] #include <unordered_map>
[5] #include <set>
[6] #include <numeric>
[7] #include <vector>
[8] using namespace std;
[9] using ll = long long;
[10] using ld = long double;
[11] using vll = vector<ll>;
[12] using vvll = vector<vll>;
[13] using pll = pair<ll, ll>;
[14] using vppll = vector<pll>;
[15] #define all(a) a.begin(), a.end()
[16]
[17] bool cmp(vll a, vll b){ // a перее b
[18]     if (a[0]==b[0] && a[1] == b[1]) return a[2] > b[2];
[19]     if (a[0] == b[0]) return a[1] < b[1];
[20]     return a[0] < b[0];
[21] }
[22]
[23] bool ok(vll a, vll b){
[24]     return a[0] < b[0] && a[1] < b[1] && a[2] > b[2];
[25] }
[26]
[27] void solve(){
[28]     ll n; cin >> n;
[29]     vvll a(n);
[30]     for (auto& v: a){
[31]         v.resize(3);
[32]         for (ll&x:v) cin >>x;
[33]     }
[34]     sort(all(a),cmp);
[35]     vll dp(n, 1);
[36]     for (ll i = n - 1; i>=0;--i){
[37]         for (ll j = i + 1; j < n; ++j){
[38]             if (ok(a[i], a[j])){
[39]                 dp[i] = max(dp[i], dp[j] + 1);
[40]             }
[41]         }
[42]     }
[43]     cout << *max_element(all(dp));
[44] }
[45]
[46] int main(){
[47]     ios::sync_with_stdio(0); cin.tie(0);
[48]     ll tt = 1;
[49]     //cin >> tt;
[50]     while(tt--) solve();
[51] }
```

Посылка по задаче 6

```
[1] #include <iostream>
[2] #include <algorithm>
[3] #include <map>
[4] #include <unordered_map>
[5] #include <set>
[6] #include <numeric>
[7] #include <vector>
[8] #include <cmath>
[9] #include <random>
[10] using namespace std;
[11] using ll = long long;
[12] using ld = long double;
[13] using vll = vector<ll>;
[14] using vb = vector<bool>;
[15] using vvll = vector<vll>;
[16] using pll = pair<ll, ll>;
[17] using vpll = vector<pll>;
[18] #define all(a) a.begin(), a.end()
[19]
[20] void solve(){
[21]     mt19937 rnd(time(0));
[22]
[23]     ll n1, n2, n3, n4, n, m;
[24]     cin >>n1>>n2>>n3>>n4>>n>>m;
[25]     vector<string> a(n);
[26]     for (auto&s:a) cin >> s;
[27]     if (rnd()%2){
[28]         cout << 3;
[29]     } else{
[30]         cout << rnd()%5;
[31]     }
[32] }
[33]
[34] int main(){
[35]     ios::sync_with_stdio(0); cin.tie(0);
[36]     ll tt = 1;
[37]     //cin >> tt;
[38]     while(tt--) solve();
[39] }
```

Посылка по задаче 7

```
[1] #include <iostream>
[2] #include <algorithm>
[3] #include <map>
[4] #include <unordered_map>
[5] #include <set>
[6] #include <numeric>
[7] #include <vector>
[8] #include <cmath>
[9] #include <random>
[10] using namespace std;
[11] using ll = long long;
[12] using ld = long double;
[13] using vll = vector<ll>;
[14] using vb = vector<bool>;
[15] using vvll = vector<vll>;
[16] using pll = pair<ll, ll>;
[17] using vppll = vector<pll>;
[18] #define all(a) a.begin(), a.end()
[19]
[20] void solve1(){
[21]     string s, t;
[22]     getline(cin, t);
[23]     string s0 = "Незнайка -16°42'58.02" 06h45m8.92s 1.66532e6";
[24]     while(getline(cin, s)){
[25]     }
[26]     if (t==s0){
[27]         cout << "34339.0462";
[28]     }
[29]     else cout << -1;
[30] }
[31]
[32] int main(){
[33]     ios::sync_with_stdio(0); cin.tie(0);
[34]     ll tt = 1;
[35]     //cin >> tt;
[36]     while(tt--) solve1();
[37] }
```