A	B	C	D	E	F	Sum
100	100	100	100	55	25	480

Task A ()

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

using namespace std;

#define int long long
typedef long double ld;

auto seed = chrono::high_resolution_clock::now().time_since_epoch().count();
mt19937 _mt(seed);

int32_t main()
{
    #ifdef LOCAL
    #else
        ios_base::sync_with_stdio(false);
        cin.tie(0); cout.tie(0);
    #endif
    int n; cin >> n;
    vector<int> a = {0, 2, 3, 4, 5, 6, 7, 8, 9};
    if (n <= 9)
        cout << n;
    else
        cout << a[(n - 10) % 9];
    return 0;
}
```

Task B ()

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

using namespace std;

#define int long long
typedef long double ld;

auto seed = chrono::high_resolution_clock::now().time_since_epoch().count();
mt19937 _mt(seed);

int32_t main()
{
    #ifdef LOCAL
    #else
        ios_base::sync_with_stdio(false);
        cin.tie(0); cout.tie(0);
    #endif
    int n, k;
    cin >> n >> k;
    string s; cin >> s;
    set <int> cur;
    int i = 0, ans = 0;
    while (i < n) {
        int j = i;
        cur = {s[i]};
        while (j < n && j - i < k && cur.size() < 4) {
            j++; cur.insert(s[j]);
        }
        i = j; ans++;
    } cout << ans;
    return 0;
}
```

Task C ()

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

using namespace std;

//#define int long long
typedef long double ld;

auto seed = chrono::high_resolution_clock::now().time_since_epoch().count();
mt19937 _mt(seed);

int32_t main()
{
    #ifdef LOCAL
    #else
        ios_base::sync_with_stdio(false);
        cin.tie(0); cout.tie(0);
    #endif
    int n, x, y;
    cin >> n >> x >> y;
    vector <int> a(n), b(n);
    for (int i = 0; i < n; i++)
        cin >> a[i];
    for (int i = 0; i < n; i++)
        cin >> b[i];
    vector <long long> dp(x + 1, -1);
    vector <vector <int> > p(n, vector <int>(x + 1, -1));
    dp[0] = 0;
    for (int i = 0; i < n; i++) {
        for (int j = x - a[i]; j >= 0; j--) {
            if (dp[j] >= 0 && dp[j + a[i]] < dp[j] + b[i]) {
                dp[j + a[i]] = dp[j] + b[i];
                p[i][j + a[i]] = j;
            }
        }
    }
    int cur = 0, curi = n - 1;
    for (int i = 0; i <= x; i++)
        if (dp[i] > dp[cur])
            cur = i;
    vector <int> ans(n);
    while (cur) {
        while (p[curi][cur] < 0) curi--;
        ans[curi] = 1;
        cur = p[curi][cur]; curi--;
    }
    int s = 0;
    for (int i = 0; i < n; i++)
        if (!ans[i])
            s += b[i];
    if (s > y)
        cout << -1;
    else
        for (auto &el : ans)
            if (el)
                cout << "x";
            else
                cout << "y";
    return 0;
}
```

Task D ()

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

using namespace std;

//#define int long long
typedef long double ld;

auto seed = chrono::high_resolution_clock::now().time_since_epoch().count();
mt19937 _mt(seed);

const int INF = 2e7;

int32_t main()
{
    #ifdef LOCAL
    #else
        ios_base::sync_with_stdio(false);
        cin.tie(0); cout.tie(0);
    #endif
    int n; cin >> n; n *= 2;
    vector <int> a(n);
    for (int i = 0; i < n; i++) {
        char c; cin >> c;
        if (c == '[' || c == ']')
            a[i] = 1;
    }
    vector <int> b(n);
    while (1) {
        int i = 0, j = 0, cnt = 0;
        while (i < a.size()) {
            if (i + 1 < a.size() && a[i] == a[i + 1]) {
                i += 2; cnt++;
            } else
                b[j++] = a[i++];
        }
        b.resize(j); b.shrink_to_fit();
        swap(a, b);
        if (!cnt) break;
    }
    cout << a.size() / 2;
    /*
    vector <vector <vector <int> > > dp(n + 1, vector <vector <int> >(n + 1, vector <int>(2, INF))
        );
    dp[0][0][0] = 0; dp[0][0][1] = 0;
    for (int i = 0; i < n; i++) {
        dp[i + 1][1][a[i]] = min(dp[i][0][0], dp[i][0][1]);
        dp[i + 1][1][a[i] ^ 1] = min(dp[i + 1][1][a[i] ^ 1], dp[i + 1][1][a[i]] + 1);
        for (int j = 1; j <= i; j++) {
            for (int k = 0; k < 2; k++) {
                dp[i + 1][j - 1][k ^ 1] = min(dp[i + 1][j - 1][k ^ 1], dp[i][j][k] + (a[i] != k));
                dp[i + 1][j + 1][k ^ 1] = min(dp[i + 1][j + 1][k ^ 1], dp[i][j][k] + (a[i] == k));
            }
        }
    }
    cout << min(dp[n][0][0], dp[n][0][1]);
    */
    return 0;
}
```

Task E ()

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

using namespace std;

#define int long long
typedef long double ld;

auto seed = chrono::high_resolution_clock::now().time_since_epoch().count();
mt19937 _mt(seed);

vector <int> cur;
set <vector <int> > allv;

void gen(int sz) {
    if (cur.size() == sz) {
        allv.insert(cur);
        return;
    }
    for (int i = 1; i <= 10; i++) {
        if (!cur.empty() && cur.back() >= i) continue;
        cur.push_back(i);
        gen(sz);
        cur.pop_back();
    }
}

int32_t main()
{
    #ifdef LOCAL
    #else
        ios_base::sync_with_stdio(false);
        cin.tie(0); cout.tie(0);
    #endif
    gen(3);
    vector <vector <int> > v3;
    for (auto &el : allv)
        v3.push_back(el);
    set <int> st;
    map <vector <int>, int> mp1, mp2;
    //random_shuffle(v3.begin(), v3.end());
    for (int i = 0; i < v3.size(); i++) {
        for (auto &el : v3[i])
        st.clear(); cur.clear();
        for (auto &el : v3[i])
            st.insert(el);
        for (int j = 1; j <= 10; j++) {
            if (!st.count(j)) {
                cur = v3[i]; cur.push_back(j);
                sort(cur.begin(), cur.end());
                if (!mp2.count(cur)) {
                    mp1[v3[i]] = j;
                    mp2[cur] = j;
                    break;
                }
            }
        }
    }
    /*
    for (auto &el : mp1) {
        for (auto &e : el.first)
            cout << e << " ";
        cout << "   " << el.second << endl;
    }
    */
    string s; int q;
    cin >> s >> q;
    while (q--) {
        int x, n;
        cin >> x >> n;
        if (s == "clear") n++;
        vector <int> a(n);
        for (int i = 0; i < n; i++)
```

```cpp
            cin >> a[i];
        sort(a.begin(), a.end());
        if (s == "add") {
            if (x == 10)
                cout << mp1[a] << endl;
            else
                cout << 841951 << endl;
        } else {
            for (int i = 0; i < n; i++)
                if ((x == 10 && mp2[a] != a[i]) || (x != 10 && a[i] != 841951))
                    cout << a[i] << " ";
            cout << endl;
        }
    }
    return 0;
}
```

Task F ()

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

using namespace std;

#define int long long
typedef long double ld;

auto seed = chrono::high_resolution_clock::now().time_since_epoch().count();
mt19937 _mt(seed);

int32_t main()
{
    #ifdef LOCAL
    #else
        ios_base::sync_with_stdio(false);
        cin.tie(0); cout.tie(0);
    #endif
    int n; cin >> n;
    vector <vector <int> > a = {{2, 0}, {1, -1}, {-2, 0}, {-1, -1}, {0, -2}, {-1, 1}, {0, 2}, {1,
        1}};
    cout << "4\n-1_0\n0_-1\n1_0\n0_1\n";
    for (int i = 0; i < n; i++)
        cout << a[i][0] << "_" << a[i][1] << "\n";
    return 0;
}
```