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

Task A ()

```cpp
#include <iostream>
#include <vector>
#include <algorithm>
#include <string>
#include <set>
#include <map>
#include <cassert>
#include <cstring>
#include <iomanip>
#include <queue>
#include <unordered_map>
#include <cmath>
#include <fstream>
#include <bitset>
#pragma GCC optimize ("Ofast")
#define double long double
#define int long long
#define vi vector<int>
#define vvi vector<vi>
#define pii pair<int, int>
#define vii vector<pii>
#define vvii vector<vii>
#define X first
#define Y second
#define rall(a) a.rbegin(), a.rend()
#define all(a) a.begin(), a.end()
#define sqr(a) (a * a)
using namespace std;
const int N = 4e5, L = 19;

int32_t main() {
        ios_base::sync_with_stdio(false);
        cin.tie(nullptr);
        cout.tie(nullptr);
//fdgdsg
        int n;
        cin >> n;
        int curr = 0, per = 0;
        for (int i = 1; i < n; ++i) {
                curr = i + per;
                per = curr / 10;
        }
        cout << (n + per) % 10;
}
```

Task B ()

```cpp
#include <iostream>
#include <vector>
#include <algorithm>
#include <string>
#include <set>
#include <map>
#include <cassert>
#include <cstring>
#include <iomanip>
#include <queue>
#include <unordered_map>
#include <cmath>
#include <fstream>
#include <bitset>
#pragma GCC optimize ("Ofast")
#define double long double
#define int long long
#define vi vector<int>
#define vvi vector<vi>
#define pii pair<int, int>
#define vii vector<pii>
#define vvii vector<vii>
#define X first
#define Y second
#define rall(a) a.rbegin(), a.rend()
#define all(a) a.begin(), a.end()
#define sqr(a) (a * a)
using namespace std;
const int N = 4e5, L = 19;

int32_t main() {
        ios_base::sync_with_stdio(false);
        cin.tie(nullptr);
        cout.tie(nullptr);
        int n, k;
        cin >> n >> k;
        string s;
        cin >> s;
        set<int> curr;
        int len = 0, res = 0;
        for (int i = 0; i < n; ++i) {
                curr.insert(s[i]);
                ++len;
                if (len > k || curr.size() > 3) {
                        len = 1;
                        curr.clear();
                        curr.insert(s[i]);
                        ++res;
                }
        }
        cout << res + 1;
}
```

Task C ()

```cpp
#include <iostream>
#include <vector>
#include <algorithm>
#include <string>
#include <set>
#include <map>
#include <cassert>
#include <cstring>
#include <iomanip>
#include <queue>
#include <unordered_map>
#include <cmath>
#include <fstream>
#include <bitset>
#pragma GCC optimize ("Ofast")
#define double long double
//#define int long long
#define vi vector<int>
#define vvi vector<vi>
#define pii pair<int, int>
#define vii vector<pii>
#define vvii vector<vii>
#define X first
#define Y second
#define rall(a) a.rbegin(), a.rend()
#define all(a) a.begin(), a.end()
#define sqr(a) (a * a)
using namespace std;
const int N = 501, W = 250100, L = 19;

int n, x, y;
int v[N], w[N];
int dp[N][W];

void upd(int i, int j, int val) {
        if (dp[i][j] == -1 || dp[i][j] > val)
                dp[i][j] = val;
}

int32_t main() {
        ios_base::sync_with_stdio(false);
        cin.tie(nullptr);
        cout.tie(nullptr);
        cin >> n >> x >> y;
        for (int i = 0; i < n; ++i)
                cin >> v[i];
        for (int i = 0; i < n; ++i)
                cin >> w[i];
        memset(dp, -1, sizeof(dp));
        dp[0][x] = 0;
        for (int i = 0; i < n; ++i)
                for (int sum = 0; sum <= x; ++sum)
                        if (dp[i][sum] != -1) {
                                if (sum - v[i] >= 0)
                                        upd(i + 1, sum - v[i], dp[i][sum]);
                                upd(i + 1, sum, dp[i][sum] + w[i]);
                        }
        int curr = -1;
        for (int sum = 0; sum <= x; ++sum)
                if (dp[n][sum] != -1 && dp[n][sum] <= y)
                        curr = sum;
        if (curr == -1) {
                cout << -1;
                return 0;
        }
        string res = "";
        for (int i = n; i > 0; --i) {
                if (dp[i][curr] == dp[i - 1][curr] + w[i - 1] && dp[i - 1][curr] != -1)
                        res.push_back('y');
                else
                        curr += v[i - 1], res.push_back('x');
        }
```

```
        reverse(all(res));
        cout << res;
}
```

Task D ()

```cpp
#include <iostream>
#include <vector>
#include <algorithm>
#include <string>
#include <set>
#include <map>
#include <cassert>
#include <cstring>
#include <iomanip>
#include <queue>
#include <unordered_map>
#include <cmath>
#include <fstream>
#include <bitset>
#pragma GCC optimize ("Ofast")
#define double long double
#define int long long
#define vi vector<int>
#define vvi vector<vi>
#define pii pair<int, int>
#define vii vector<pii>
#define vvii vector<vii>
#define X first
#define Y second
#define rall(a) a.rbegin(), a.rend()
#define all(a) a.begin(), a.end()
#define sqr(a) (a * a)
using namespace std;
const int N = 200, L = 19;

string s;

int32_t main() {
        ios_base::sync_with_stdio(false);
        cin.tie(nullptr);
        cout.tie(nullptr);
        int n;
        cin >> n >> s;
        for (auto& c : s)
                if (c == '(' || c == ')')
                        c = '1';
                else
                        c = '0';
        vector<char> st;
        for (auto x : s)
                if (st.size() && st.back() == x)
                        st.pop_back();
                else
                        st.push_back(x);
        cout << st.size() / 2;
}
```

Task E ()

```cpp
#include <iostream>
#include <vector>
#include <algorithm>
#include <string>
#include <set>
#include <map>
#include <cassert>
#include <cstring>
#include <iomanip>
#include <queue>
#include <unordered_map>
#include <cmath>
#include <fstream>
#include <bitset>
#pragma GCC optimize ("Ofast")
#define double long double
#define int long long
#define vi vector<int>
#define vvi vector<vi>
#define pii pair<int, int>
#define vii vector<pii>
#define vvii vector<vii>
#define X first
#define Y second
#define rall(a) a.rbegin(), a.rend()
#define all(a) a.begin(), a.end()
#define sqr(a) (a * a)
using namespace std;
const int N = 1e6+ 1, mod = 179179179, P = 17;

map<int, int> pairs = { { 11, 15 }, { 7, 23 }, { 25, 27 }, { 21, 29 }, { 26, 30 }, { 38, 39 }, {
    35, 43 }, { 37, 45 }, { 14, 46 }, { 50, 51 }, { 49, 53 }, { 22, 54 }, { 41, 57 }, { 42, 58 },
    { 56, 60 }, { 70, 71 }, { 73, 75 }, { 69, 77 }, { 74, 78 }, { 19, 83 }, { 84, 85 }, { 82, 86
    }, { 81, 89 }, { 88, 90 }, { 76, 92 }, { 67, 99 }, { 100, 101 }, { 98, 102 }, { 97, 105 }, {
    104, 106 }, { 44, 108 }, { 112, 113 }, { 52, 116 }, { 134, 135 }, { 137, 139 }, { 13, 141 }, {
     138, 142 }, { 131, 147 }, { 148, 149 }, { 146, 150 }, { 145, 153 }, { 152, 154 }, { 28, 156
    }, { 162, 163 }, { 133, 165 }, { 164, 166 }, { 161, 169 }, { 168, 170 }, { 140, 172 }, { 176,
    177 }, { 193, 195 }, { 196, 197 }, { 194, 198 }, { 200, 201 }, { 208, 209 }, { 224, 225 }, {
    259, 263 }, { 266, 267 }, { 265, 269 }, { 262, 270 }, { 274, 275 }, { 261, 277 }, { 276, 278
    }, { 273, 281 }, { 280, 282 }, { 268, 284 }, { 289, 291 }, { 292, 293 }, { 290, 294 }, { 296,
    297 }, { 304, 305 }, { 321, 323 }, { 324, 325 }, { 322, 326 }, { 328, 329 }, { 336, 337 }, {
    352, 353 }, { 385, 387 }, { 388, 389 }, { 386, 390 }, { 392, 393 }, { 400, 401 }, { 416, 417
    }, { 448, 449 }, { 515, 519 }, { 522, 523 }, { 521, 525 }, { 518, 526 }, { 530, 531 }, { 517,
    533 }, { 532, 534 }, { 529, 537 }, { 536, 538 }, { 524, 540 }, { 545, 547 }, { 548, 549 }, {
    546, 550 }, { 552, 553 }, { 560, 561 }, { 577, 579 }, { 580, 581 }, { 578, 582 }, { 584, 585
    }, { 592, 593 }, { 608, 609 }, { 641, 643 }, { 644, 645 }, { 642, 646 }, { 648, 649 }, { 656,
    657 }, { 672, 673 }, { 704, 705 }, { 769, 771 }, { 772, 773 }, { 770, 774 }, { 776, 777 }, {
    784, 785 }, { 800, 801 }, { 832, 833 }, { 896, 897 } };

void solve_add() {
        int n, k;
        cin >> n >> k;
        if (n == 10) {
                int mask = 0;
                for (int i = 0; i < k; ++i) {
                        int a;
                        cin >> a;
                        --a;
                        mask += (1 << a);
                }
                int mask2 = pairs[mask];
                for (int i = 0; i < n; ++i)
                        if ((mask & (1 << i)) != (mask2 & (1 << i)))
                                cout << i + 1 << "\n";
                return;
        }
        cout << "239324";
}

void solve_clear() {
        int n, k;
```

```cpp
        cin >> n >> k;
        if (n == 10) {
                int mask = 0;
                for (int i = 0; i < k + 1; ++i) {
                        int a;
                        cin >> a;
                        --a;
                        mask += (1 << a);
                }
                int mask2;
                for (auto x : pairs)
                        if (x.Y == mask)
                                mask2 = x.X;
                for (int i = 0; i < n; ++i)
                        if (mask2 & (1 << i))
                                cout << i + 1 << " ";
                cout << "\n";
                return;
        }
        for (int i = 0; i < k + 1; ++i) {
                int a;
                cin >> a;
                if (a != 239324)
                        cout << a << " ";
        }
}

int32_t main() {
        ios_base::sync_with_stdio(false);
        cin.tie(nullptr);
        cout.tie(nullptr);
        string s;
        cin >> s;
        int t;
        cin >> t;
        while (t--)
                if (s == "add")
                        solve_add();
                else
                        solve_clear();
}
```

Task F ()

```cpp
#include <iostream>
#include <vector>
#include <algorithm>
#include <string>
#include <set>
#include <map>
#include <cassert>
#include <cstring>
#include <iomanip>
#include <queue>
#include <unordered_map>
#include <cmath>
#include <fstream>
#include <bitset>
#pragma GCC optimize ("Ofast")
#define double long double
#define int long long
#define vi vector<int>
#define vvi vector<vi>
#define pii pair<int, int>
#define vii vector<pii>
#define vvii vector<vii>
#define X first
#define Y second
#define rall(a) a.rbegin(), a.rend()
#define all(a) a.begin(), a.end()
#define sqr(a) (a * a)
using namespace std;
const int N = 200, mod = 179179179, P = 17;

//dsklfdsfjdsnfkdsf
int32_t main() {
        ios_base::sync_with_stdio(false);
        cin.tie(nullptr);
        cout.tie(nullptr);
        int n;
        cin >> n;
        cout << "4\n";
        cout << "0 0\n0 1\n1 1\n1 0\n";
        vii vec = { {1, 1}, {0, 1}, {1, 0}, {-1, 1}, {1, -1}, {-1, 0}, {0, -1}, {-1, -1} };
        for (int i = 0; i < n; ++i)
                cout << vec[i].X << " " << vec[i].Y << "\n";
}
```