A	B	C	D	E	F	Sum
100	100	100	100	20	25	445

Task A ()

```python
n = int(input())
# a = int('1'*n)
# a = str(a*a)
alp1 = '123456789'
alp2 = '023456789'
if n < 10:
    print(alp1[n-1])
else:
    print(alp2[(n-9-1)%9])
# s = 0
# k = 0
# for i in range(n):
#     s += 1 + k
#     while s >= 10:
#         k += 1
#         s -= 10
#     print(a[-i-1])
# print(a[-n])
```

Task B ()

```cpp
#include <iostream>
#include <vector>
#include <bitset>
#include <unordered_map>
#include <algorithm>
#include <map>
#include <set>
#include <cmath>

using namespace std;

bool check(int m, int k, string &s){
    int i = 0, res = 0;
    while (i < s.size()){
        set<int> dif;
        dif.insert(s[i]);
        int l = 1;
        res++;
        while (i < s.size() && k >= l && dif.size() <= 3){
            l++;
            i++;
            dif.insert(s[i]);
//            l++;
//            i++;
        }
//        if (k>=l || dif.size() > 3)
//            i--;
    }
//    cout << res << endl;
    return res <= m;
}

int32_t main() {
    int n, k;
    cin >> n >> k;
    string s;
    cin >> s;
//    cout << check(3, k, s);
    int l = 0, r = n;
    while (l+1 < r){
        int m = (l+r)/2;
        if (check(m, k, s))
            r = m;
        else
            l = m;
    }
    cout << r << endl;
}

/*
9 3
abcabcabc

 */
```

Task C ()

```cpp
#include <iostream>
#include <vector>
#include <bitset>
#include <unordered_map>
#include <algorithm>
#include <map>
#include <set>
#include <cmath>
#include <stack>
#define ll long long
using namespace std;

void first(int k, int s, int v, int w, vector<int> &vs, vector<int> &ws, vector<char> &res, int n)
    {
//    cout << k << ' ' << s << endl;
    if (k <= w && s <= v){
        for (auto i : res) cout << i;
        cout << endl;
        exit(0);
    }
    if (k >= w)
        return;
//    cout << "Hi" << endl;
    for (int i = 0; i < n; i++){
        if (res[i] == 'x'){
            res[i] = 'y';
            s-=vs[i];
            k+=ws[i];
            first(k, s, v, w,  vs, ws, res, n);
            k-=ws[i];
            s+=vs[i];
            res[i] = 'x';
        }
    }
}

int32_t main() {
//    cin.tie(NULL);
//    io
    int n, v, w, s = 0;
    cin >> n >> v >> w;
    vector<int> vs(n), ws(n);
    for (int i = 0; i < n; i++) cin >> vs[i];
    for (int i = 0; i < n; i++) cin >> ws[i], s+=ws[i];
//    if (v > w){
//        swap(v, w);
//        swap(vs, ws);
//    }
    vector<pair<int, vector<bool>>> dp(v+1, {s+1, vector<bool> (n, 1)});
    dp[0].first = s;
//    dp[0] = s;
    if (dp[0].first <= w){
        for (auto c : dp[0].second){
            if (c)
                cout << 'y';
            else
                cout << 'x';
        }
        cout << endl;
        return 0;
    }
    for (int i = 0; i < n; i++) {
        for (int j = v - vs[i]; j >= 0; j--) {
//            if (j + vs[i] > v)
//                continue;
            if (dp[j].first != s + 1) {
                if (dp[j+vs[i]].first > dp[j].first - ws[i]){
                    dp[j+vs[i]].second = dp[j].second;
                    dp[j + vs[i]].second[i] = 0;
                    dp[j+vs[i]].first = dp[j].first - ws[i];
//                    cout << dp[j+vs[i]].first<< ' ' << j << endl;
                }
```

```cpp
            }
            if (dp[j + vs[i]].first <= w){
                for (auto c : dp[j+vs[i]].second){
                    if (c)
                        cout << 'y';
                    else
                        cout << 'x';
//                      cout << c;
                }
                cout << endl;
                return 0;
            }

        }
    }
    cout << -1 << endl;
}

/*
add
1
10 3
7 2 3

 clear
1
10 3
2 7 3 10
 */
```

Task D ()

```cpp
#include <iostream>
#include <vector>
#include <bitset>
#include <unordered_map>
#include <algorithm>
#include <map>
#include <set>
#include <cmath>
#include <stack>

using namespace std;

void first(int k, int s, int v, int w, vector<int> &vs, vector<int> &ws, vector<char> &res, int n)
    {
//    cout << k << ' ' << s << endl;
    if (k <= w && s <= v){
        for (auto i : res) cout << i;
        cout << endl;
        exit(0);
    }
    if (k >= w)
        return;
//    cout << "Hi" << endl;
    for (int i = 0; i < n; i++){
        if (res[i] == 'x'){
            res[i] = 'y';
            s-=vs[i];
            k+=ws[i];
            first(k, s, v, w,  vs, ws, res, n);
            k-=ws[i];
            s+=vs[i];
            res[i] = 'x';
        }
    }
}

int32_t main() {
    int n;
    vector<char> ns;
    char c;
    cin >> n;
    string s;
    stack<int> ss;
//    cin >> s;
//    for (int i = 0)
    for (int i = 0; i < 2*n; i++){
        cin >> c;
        ns.push_back(c);
        if (c == ')' || c == '('){
            if (ss.size() && ss.top() == 1)
                ss.pop();
            else
                ss.push(1);
        }
        else{
            if (ss.size() && ss.top() == 2)
                ss.pop();
            else
                ss.push(2);
        }
    }
//    for (auto i : ns) cout << i;
    cout << ss.size()/2 << endl;
//    cout << endl;
}

/*
5
 (((([([))((

 4
 ((](()]))
```

```
*/
```

6

Task E ()

```cpp
#include <iostream>
#include <vector>
#include <bitset>
#include <unordered_map>
#include <algorithm>
#include <map>
#include <set>
#include <cmath>
#include <stack>
#include <random>
#define int long long
using namespace std;


void first(int k, int s, int v, int w, vector<int> &vs, vector<int> &ws, vector<char> &res, int n)
    {
//     cout << k << ' ' << s << endl;
    if (k <= w && s <= v){
        for (auto i : res) cout << i;
        cout << endl;
        exit(0);
    }
    if (k >= w)
        return;
//     cout << "Hi" << endl;
    for (int i = 0; i < n; i++){
        if (res[i] == 'x'){
            res[i] = 'y';
            s-=vs[i];
            k+=ws[i];
            first(k, s, v, w,  vs, ws, res, n);
            k-=ws[i];
            s+=vs[i];
            res[i] = 'x';
        }
    }
}

int32_t main() {
    string s;
    srand(1);
    int ri = rand(), i1 = 2, i2 = 1, i3 = 0;
    cin >> s;
    int t, n, k;
    cin >> t;
    cin >> n >> k;
    n++;
    ri = ri%n;
    int ri2 = rand();
    if (n > 10)
        while (t--) {
            {
                if (s[0] == 'a') {
                    vector<int> a(k);
                    for (int i = 0; i < k; i++) {
                        cin >> a[i];
                        if (a[i] == ri) {
                            cout << "(" << endl;
                            exit(1);
                        }
                    }
                    cout << ri << endl;

                } else {
//                    vector<int> res;
//                    res.reserve(n);
                    for (int i = 0; i <= k; i++) {
                        int temp;
                        cin >> temp;
                        if (temp != ri) {
                            cout << temp << '_';
                        }
```

```cpp
                }
//                      cout << ri << endl;
            }
        }
    }
    else
        while (t--){
            if(s[0] == 'a'){
                vector<int> a(k);
                int p = 0, st = 1;
                for (int i = 0; i < k; i++) cin >> a[i];
                sort(a.begin(), a.end());
                p = a[i1] * (a[i2] + a[i3]);
//                  p+=ri2;
//                  for (int i : a)
//                      if (i == p%n)
//                          exit(1);
                cout << p%n << endl;
            }
            else{
                vector<int> a(k);
                for (int i = 0; i < k+1; i++) cin >> a[i];
                for (int i = 0; i < k+1; i++){
                    int p = 0, st = 1;
                    vector<int> temp;
                    for (int j = 0; j <= k; j++)
                        if (j != i)
                            temp.push_back(a[j]);
                    sort(temp.begin(), temp.end());
                    p = temp[i1] * (temp[i2] + temp[i3]);
//                      p+=ri2;
                    if (p%n == a[i]) {
                        for (int j = 0; j <= k; j++)
                            if (i != j)
                                cout << a[j] << ' ';
                        return 0;
                    }
                }
            }
        }
}

/*
add
1
10 3
7 2 3

 clear
1
10 3
2 7 3 6
 */
```

Task F ()

```cpp
#include <iostream>
#include <vector>
#include <bitset>
#include <unordered_map>
#include <algorithm>
#include <map>
#include <set>
#include <cmath>
#include <stack>

using namespace std;

void first(int k, int s, int v, int w, vector<int> &vs, vector<int> &ws, vector<char> &res, int n)
    {
//     cout << k << ' ' << s << endl;
    if (k <= w && s <= v){
        for (auto i : res) cout << i;
        cout << endl;
        exit(0);
    }
    if (k >= w)
        return;
//     cout << "Hi" << endl;
    for (int i = 0; i < n; i++){
        if (res[i] == 'x'){
            res[i] = 'y';
            s-=vs[i];
            k+=ws[i];
            first(k, s, v, w,  vs, ws, res, n);
            k-=ws[i];
            s+=vs[i];
            res[i] = 'x';
        }
    }
}

int32_t main() {
    string s = "12\n4_1\n4_0\n5_0\n5_1\n6_1\n6_2\n5_2\n5_3\n4_3\n4_2\n3_2\n3_1\n";
    int n;
    cin >> n;
    vector<pair<int, int>> a(8);
    a[0] = {-3, 1};
    a[1] = {-1, 2};
    a[2] = {1, 3};
    a[3] = {2, 1};
    a[4] = {3, -1};
    a[5] = {1, -2};
    a[6] = {-1, -3};
    a[7] = {-2, -1};
    cout << s;
    for (int i = 0; i < n; i++)
        cout << a[i].first << '_' << a[i].second << endl;
}

/*
5
 ((([([))((

 4
 ((]()]))
 */
```