

```
1 #include <stdlib.h>
2 #include <iostream>
3 #include <vector>
4 #include <climits>
5 #include <algorithm>
6 using namespace std;
7
8 int russia(vector<int> &coins, vector<vector<int>> &memo, int k, int l, int r,
int m, int turn){
9     if(memo[l][r] != -1) return memo[l][r];
10    if(l == r) return memo[l][r] = turn == k? coins[l] : 0; // one coin
11    //2 or more coins
12    int left = russia(coins, memo, k, l + 1, r, m, (turn + 1) % m); //take
left
13    int right = russia(coins, memo, k, l, r - 1, m, (turn + 1) % m); //take
right
14
15    if(turn != k) return memo[l][r] = min(left, right);
16    return memo[l][r] = max(coins[l] + left, coins[r] + right); // my turn =
add the value of the coin
17 }
18
19 int main(){
20     std::ios_base::sync_with_stdio(false);
21     int t;
22     cin >> t;
23     while(t-- > 0){
24         int n, m, k;
25         cin >> n >> m >> k;
26         vector<int> coins(n);
27         vector<vector<int>> > memo(n, vector<int>(n, -1));
28         for(int i = 0; i < n; i++){
29             cin >> coins[i];
30         }
31         cout << russia(coins, memo, k, 0, n - 1, m, 0) << '\n';
32     }
33     return 0;
34 }
```