```cpp
#include<bits/stdc++.h>
using namespace std;
const int maxn = 1006;
typedef long long ll;
ll sum1[maxn], sum2[maxn];
ll n, m, Q;
void add(ll p, ll x)//单点修改
{
    for (int i = p; i <= n; i += i & -i)
        sum1[i] += x, sum2[i] += x * p;
}
void range_add(ll l, ll r, ll x)//区间修改
{
    add(l, x), add(r + 1, -x);
}
ll ask(ll p) //单点查询
{
    ll res = 0;
    for (int i = p; i; i -= i & -i)
        res += (p + 1) * sum1[i] - sum2[i];
    return res;
}
ll range_ask(ll l, ll r)//区间查询
{
    return ask(r) - ask(l - 1);
}
/// <summary>
/// 二维前缀和
/// </summary>
ll t1[maxn][maxn], t2[maxn][maxn], t3[maxn][maxn], t4[maxn][maxn];
void add(ll x, ll y, ll z) //单点修改
{
    for (int X = x; X <= n; X += X & -X)
        for (int Y = y; Y <= m; Y += Y & -Y)
        {
            t1[X][Y] += z;
            t2[X][Y] += z * x;
            t3[X][Y] += z * y;
            t4[X][Y] += z * x * y;
        }
}
void range_add(ll xa, ll ya, ll xb, ll yb, ll z) { //(xa, ya) 到 (xb, yb) 的矩形
    add(xa, ya, z);
    add(xa, yb + 1, -z);
    add(xb + 1, ya, -z);
    add(xb + 1, yb + 1, z);
}
ll ask(ll x, ll y) //单点查询
{
    ll res = 0;
    for (int i = x; i; i -= i & -i)
        for (int j = y; j; j -= j & -j)
            res += (x + 1) * (y + 1) * t1[i][j]
            - (y + 1) * t2[i][j]
            - (x + 1) * t3[i][j]
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56              + t4[i][j];
57      return res;
58  }
59  ll range_ask(ll xa, ll ya, ll xb, ll yb)//区间查询
60  {
61      return ask(xb, yb) - ask(xb, ya - 1) - ask(xa - 1, yb) + ask(xa - 1, ya -
          1);
62  }
```