

```
1  #include <stdio.h>
2  #include <string.h>
3  #include <algorithm>
4  using namespace std;
5
6  #define MAX 1123
7
8  int b2d[MAX][MAX];
9  int x, y, n;
10
11 void setbit2d(int x1 , int y1 , int val){
12     int i, j;
13     for(i = x1; i <= x; i += i & (-i))
14         for (j = y1; j <= y; j += j & (-j))
15             b2d[i][j] += val;
16 }
17
18 int getbit2d(int x1, int y1){
19     int i, j, ret = 0;
20     for(i = x1; i; i -= i & (-i))
21         for (j = y1; j; j -= j & (-j))
22             ret += b2d[i][j];
23     return ret;
24 }
25
26 void altera(int &x1, int &y1, int &x2, int &y2){
27     int auxx1 = x1, auxx2 = x2, auxy1 = y1, auxy2 = y2;
28     x1 = min(auxx1, auxx2);
29     x2 = max(auxx1, auxx2);
30     y1 = min(auxy1, auxy2);
31     y2 = max(auxy1, auxy2);
32     x1++; y1++; x2++; y2++;
33 }
34
35 int getP(int x1, int y1, int x2, int y2){
36     return getbit2d(x2, y2) - getbit2d(x1 - 1, y2) - getbit2d(x2, y1 - 1) +
37         getbit2d(x1 - 1, y1 - 1);
38 }
39
40 int main(void){
41     int q, x1, y1, x2, y2, p;
42     char r;
43     while(scanf("%d %d %d", &x, &y, &p), x){
44         memset(b2d, 0, sizeof(b2d));
45         scanf("%d", &q);
46         while(q--){
47             scanf(" %c", &r);
48             switch(r){
49                 case 'A':
50                     scanf("%d %d %d", &n, &x1, &y1); x1++; y1++;
51                     setbit2d(x1, y1, n);
52                     break;
53                 case 'P':
54                     scanf("%d %d %d %d", &x1, &y1, &x2, &y2);
55                     altera(x1, y1, x2, y2);
56                     printf("%d\n", getP(x1, y1, x2, y2) * p);
57                     break;
58             }}
59         printf("\n");
60     }
61     return 0;
62 }
```