```cpp
#include <cstdio>

bool isInvalidMove(int x, int y, int d) {
    if(d == 0 && x  == 1)
        return true;
    else if(d == 1 && y == 1)
        return true;
    else if(d == 2 && x == 8)
        return true;
    else if(d == 3 && y == 8)
        return true;
    else
        return false; // valid, need to make a move
}

void makeAMove(int x, int y, int d, int b[9][9]) {
    if(isInvalidMove(x, y, d))
        return; // do nothing

    int temp = b[y][x];
    if(d == 0) {
        b[y][x] = b[y][x-1];
        b[y][x-1] = temp;
    } else if(d == 1) {
        b[y][x] = b[y-1][x];
        b[y-1][x] = temp;
    } else if(d == 2) {
        b[y][x] = b[y][x+1];
        b[y][x+1] = temp;
    } else if(d == 3) {
        b[y][x] = b[y+1][x];
        b[y+1][x] = temp;
    }
}

int countHorizontal(int x, int y, int b[9][9]) {
    int count = 1;
    int target = b[y][x];
    int xx = x - 1;
    while(xx >= 1 && b[y][xx] == target) {
        ++count;
        --xx;
    }
    xx = x + 1;
    while(xx <= 8 && b[y][xx] == target) {
        ++count;
        ++xx;
    }
    return count;
}

int countVertical(int x, int y, int b[9][9]) {
    int count = 1;
    int target = b[y][x];
    int yy = y - 1;
    while(yy >= 1 && b[yy][x] == target) {
        ++count;
        --yy;
    }
    yy = y + 1;
    while(yy <= 8 && b[yy][x] == target) {
        ++count;
        ++yy;
    }
    return count;
}


int main() {
```

```
70      int b[9][9];
71      for(int row = 1; row <= 8; ++row)
72          for(int col = 1; col <= 8; ++col)
73              scanf("%d", &b[row][col]);
74
75      int n;
76      scanf("%d", &n);
77      for(int i = 0; i < n; ++i) {
78          int x, y, d;
79          scanf("%d%d%d", &x, &y, &d);
80          makeAMove(x, y, d, b);
81          printf("H %d V %d\n", countHorizontal(x, y, b), countVertical(x, y, b));
82      }
83
84      return 0;
85  }
86
```