

## 2021 Rectangular Rectitude

Starting with an initial colorless background, we will paint a sequence of potentially overlapping, horizontally-aligned rectangles of various colors. The problem is to determine the exposed area of a given color.

### Input

The input data file contains a collection of independent datasets.

The first line of each dataset contains two numbers. The first number is an integer  $0 \leq n \leq 100$  specifying the number of rectangles that follow. The second number is a positive integer  $0 < c < 8$ , representing the color whose exposed area we want to determine.

Each of the next  $n$  lines of the dataset contains information about a rectangle, and the lines are given in order of the painting sequence. The first number on the line is an integer  $0 < c' < 8$ , representing the rectangle's color. The next two integer values on the line are respectively the  $x$ - and  $y$ -coordinates of any corner of the rectangle. The last two integer values are respectively the  $x$ - and  $y$ -coordinates of the diagonally opposite corner of the rectangle. All coordinates lie in the range from  $-100$  to  $+100$  inclusively.

The end of input will be indicated by a dataset with  $n = 0$ . This dataset should not be processed.

### Output

For each dataset, the output of your program will be a single line containing the string 'The area of color  $x$  in dataset  $y$  is:' followed by a single integer representing the area (in square units) of the exposed color specified in the dataset.

### Sample Input

```
4 2
2 6 0 0 4
4 1 4 3 -1
2 3 3 8 7
5 2 2 4 6
1 5
7 0 0 1 1
2 3
3 0 0 2 2
4 0 0 1 1
0 1
```

### Sample Output

```
The area of color 2 in dataset 1 is: 31
The area of color 5 in dataset 2 is: 0
The area of color 3 in dataset 3 is: 3
```