Level 4

> Level 4

Guards

In order to ensure security at the summit, we need to know how many guards we need to deploy and where they need to be. Assuming our images are centered on the most important point, calculate how many guards each building will have based on the distance to the center.

Task for Level 4:

Calculate the amount of guards required for every building in the area
Based on distance from the center of the site, each cell of a building requires an amount of guards

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- The amount of **guards per building** is the **sum of the guards on each cell** of the building
- The amount of **guards on a cell** is calculated based on the **distance from the center of the cell to the center** of the site and some given range of values
- The distance to the center is calculated **excluding the height** (i.e. project the points to the ground level)
- For example:
  - Ranges:
    - **up to 5 cells => 3 guards per cell**
    - up to 15 cells => 2 guards per cell
    - up to 30 cells => 1 guard per cell
    - over 30 cells => 0 guards per cell
  - Distance:
    - d=4 => 3 guards
    - **d=5 => 3 guards**
    - d=25 => 1 guard
    - d=31 => 0 guards

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Input format:

<number_of_rows> <number_of_columns>
<height> <height> ...
<height> <height> ....

...

<number_of_ranges>

<range0> <guard_count0>

<range1> <guard_count1>

<range2> <guard_count2>

<range3> <guard_count3>

...

The range values have the following format:

- d ∈ [0, range0] => guard_count0
- d ∈ (range0, range1] => guard_count1
- d ∈ (range1, range2] => guard_count2
- d ∈ (range2, range3] => guard_count3
- d > range3 => 0

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Output format:

<bulding_id0> <guard_count0>

<bulding_id1> <guard_count1>

...

For each building output the **id and the guard count** on a separate line

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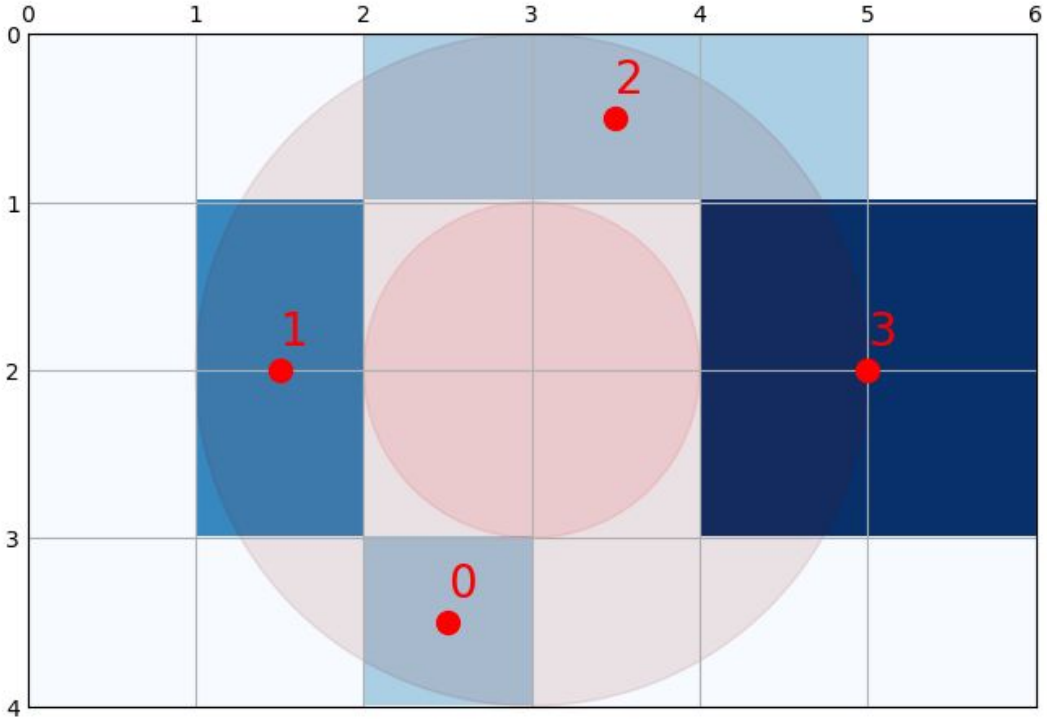
Input:

```
4 6
0 0 1 1 1 0
0 2 0 0 3 3
0 2 0 0 3 3
0 0 1 0 0 0
2
1 4
2 2
```

Output:

```
0 2
1 4
2 4
3 4
```



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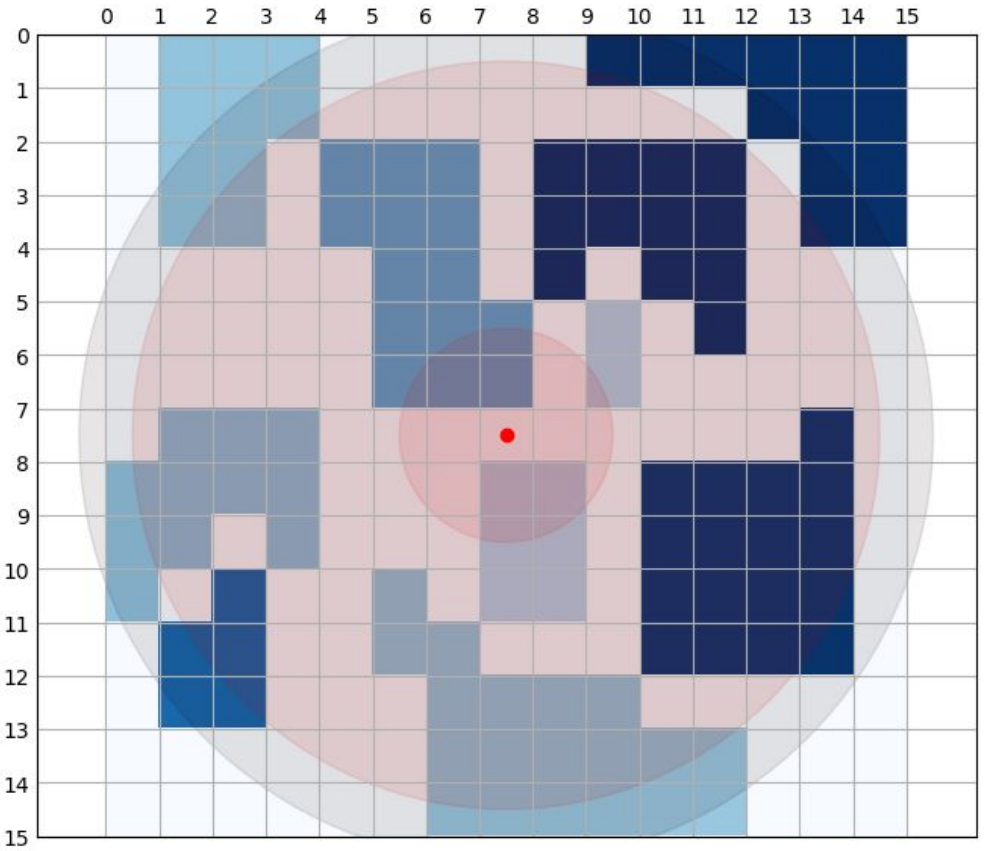
Catalysts

Level 4

Note:
The center of the site should not be rounded



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