



# Level 5

## Extraction

Now that the event is over, we need to extract our deployed guards, but the danger is not over yet. We want to do it as fast as possible to prevent any possible dangers.

Task for Level 5:

**A helicopter needs to pick up all the guards so that the combined total time that guards are deployed is less than some given threshold. The helicopter moves at a given speed.**



- › The helicopter moves at **V cells per second**, where V is given in the input.
- › The **solution is not unique**. Any solution that **fits below the threshold** will be considered valid.
- › In order to pick up the guards from a building the **helicopter needs to land in the center** of that building. The **center is defined as in Level 3**.
- › The helicopter can travel in a **straight line** from any building center to another, **ignoring collisions** with other buildings.
- › If at any point you have **n guards** still not picked up, in the next second, the combined deployed time **will increase by n**.
- › The **guards are picked up instantly** once the helicopter lands.
- › The helicopter starts at **(0, 0)**
- › All the previous conditions apply.

**Input format:**

<number\_of\_rows> <number\_of\_columns> <threshold> <V>

<height> <height> ...

<height> <height> ....

...

<number\_of\_ranges>

<range0> <guard\_count0>

<range1> <guard\_count1>

<range2> <guard\_count2>

<range3> <guard\_count3>

...

The guard count ranges have the same format as in the previous level

**Output format:**

<building\_id0> <building\_id1> <building\_id2> <building\_id3> ...

A **space separated** list of the building ids in the order they will be visited by the helicopter



**Example:**

**Input:** level5\_0.in

**Output:** 0 2 9 4 7 1 5 8 6 3

