Level 4

> Level 4

Glados:
Superb job! We have launched the robots on from two sites now, but we're having one small issue... The planet has some dark spots which we observed caused our scavengers to malfunction. Can you find ways to work around them?
One more thing, general Sigismund now wants to cut costs and make the scavengers explore as efficiently as possible.

Task for Level 4:

Given these new constraints, find the shortest path between two spots

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- Scavengers cannot pass through black (0, 0, 0) spots
- Scavengers can now move in all **4 directions** around their cell
- They can also not pass through an already visited position

- Given two points on the map (A and B) each described by their coordinates **(row, column)** find the **shortest** path between them
- The shortest path is the path with the least amount of cells traveled
- You will have to output the length of the path for each pair of points
- There will be **N pairs** of A, B coordinates will be given. Find the path for each pair

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Input format:

<NrRows> <NrColumns>

<N>

<A row> <A column> <B row> <B column>

....

<A row> <A column> <B row> <B column>

N times

<R> <G> <B> ... <R> <G> <B>

...

<R> <G> <B> ... <R> <G> <B>

CATALYSTS CODING CONTEST

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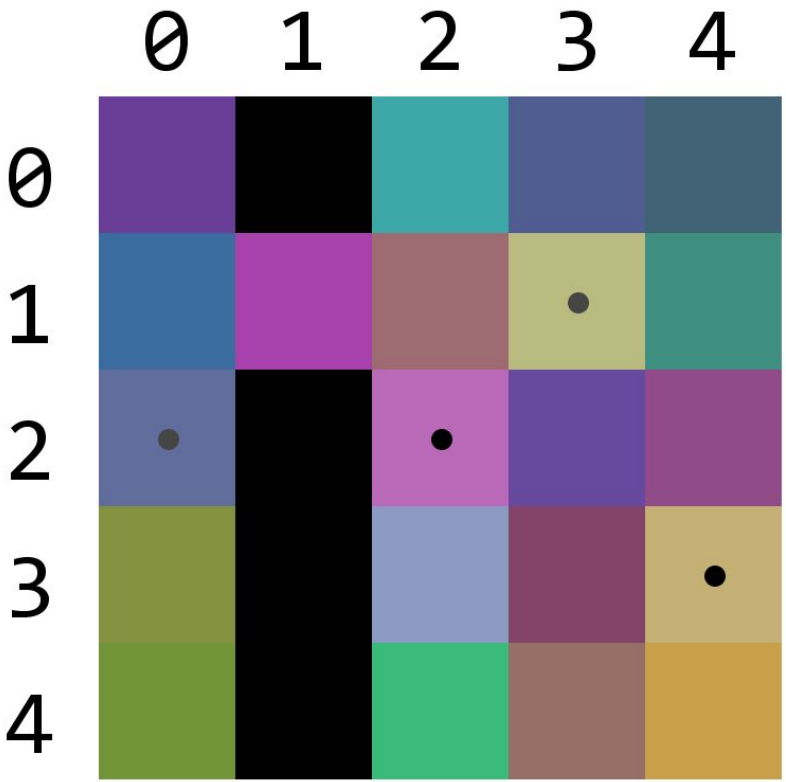
Input example:

```
5 5
2
2 2 3 4
1 3 2 0
105 62 150 0 0 0 62 168 168 80 93 144 65 99 117
59 109 161 169 66 173 159 107 114 185 187 129 63 144 129
97 110 157 0 0 0 187 105 185 103 74 160 145 75 137
133 146 63 0 0 0 140 154 196 132 67 105 197 176 117
113 149 56 0 0 0 58 187 124 151 111 103 199 160 73
```



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Output format:

<PathLength>

…

<PathLength>

} NrPaths times

Output example:

3
4