2. Given the following board, where the fields are numbered:

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1 | 5 | 3 | 4 | 3 | 6 | 7 | 1 | 1 | 6 |
| 4 | 4 | 3 | 4 | 2 | 6 | 2 | 6 | 2 | 5 |
| 1 | 3 | 9 | 4 | 5 | 2 | 4 | 2 | 9 | 5 |
| 5 | 2 | 3 | 5 | 5 | 6 | 4 | 6 | 2 | 4 |
| 1 | 3 | 3 | 2 | 5 | 6 | 5 | 2 | 3 | 2 |
| 2 | 5 | 2 | 5 | 5 | 6 | 4 | 8 | 6 | 1 |
| 9 | 2 | 3 | 6 | 5 | 6 | 2 | 2 | 2 | 0 |

There is a figurine in the top-left corner. Our task is to move it to the bottom-right corner. The rule is that the figurine must take the number of steps shown on the field it currently sits in and can either move vertically or horizontally or diagonally (a total of 8 directions).

1. **Characteristics:**

– the row index of the figurine

– the column index of the figurine

– the numbered value of the current field

– the matrix representing the board and field values

1. **Set of valid states:**
2. **Initial state:**
3. **Set of goal states:**
4. **Set of operators:**

– is the direction of movement:

1 ⇖ 2 ⇑ 3 ⇗

4 ⇐ 5 ⇒

6 ⇙ 7 ⇓ 8 ⇘

1. **Domain of operators:**
2. **Effect definition (transition function):**