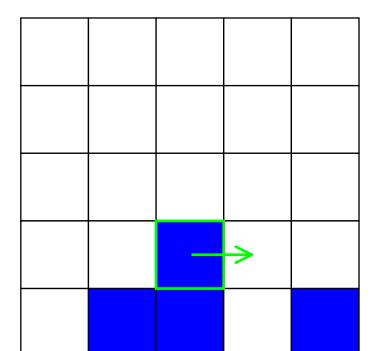
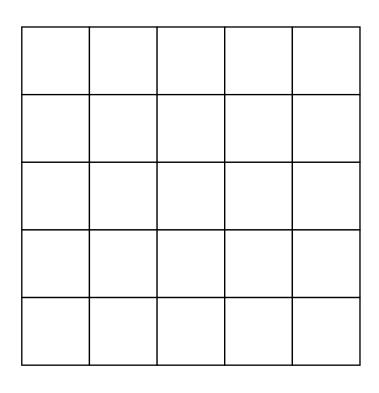
..::SOLUTION:...: Solvable in 1 moves (blocks positions: {(3, 2): <Color: blue>, (4, 1): <Color: blue>, (4, 2): <Color: blue>, (4,

INITIAL STATE: (MOVE 1)
Perform: move\_right at position: (3, 2):

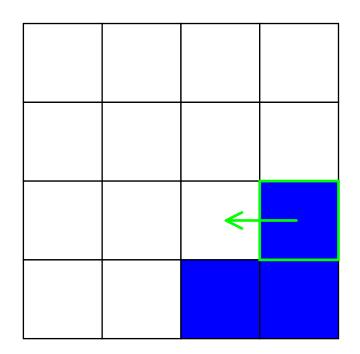


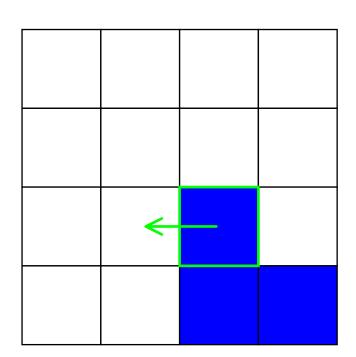


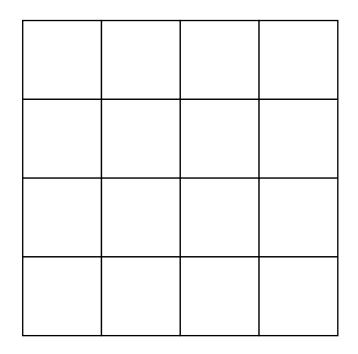
.:::SOLUTION::..: Solvable in 2 moves (blocks positions: {(2, 3): <Color: blue>, (3, 2): <Color: blue>, (3, 3): <Color: blue>})

INITIAL STATE: (MOVE 1)
Perform: move\_left at position: (2, 3):

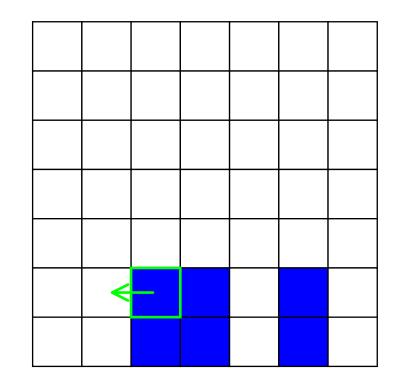
(MOVE 2)
Perform: move\_left at position: (2, 2):

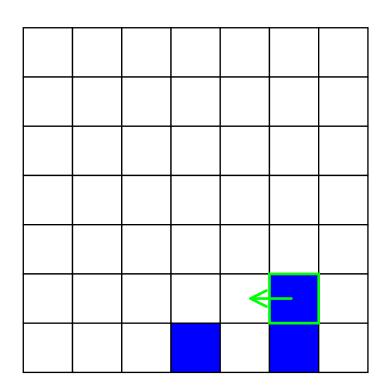


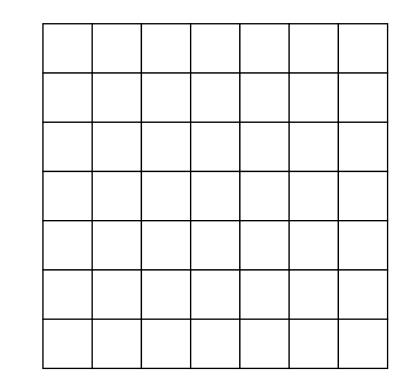




..::SOLUTION:..: Solvable in 2 moves (blocks positions: {(5, 2): <Color: blue>, (5, 3): <Color: blue>, (5, 5): <Color: blue>, (6, 2): <Color: blue>, (6, 3): <Color: blue>, (6, 3): <Color: blue>, (6, 5): <Color: blue>, (6, 5): <Color: blue>, (6, 5): <Color: blue>, (6, 2): <Color: blue>, (6, 3): <Color: blue>, (6, 3): <Color: blue>, (6, 5): <Co

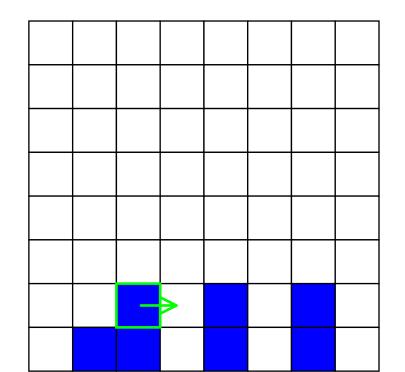




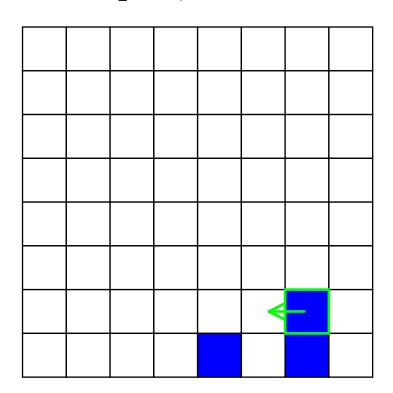


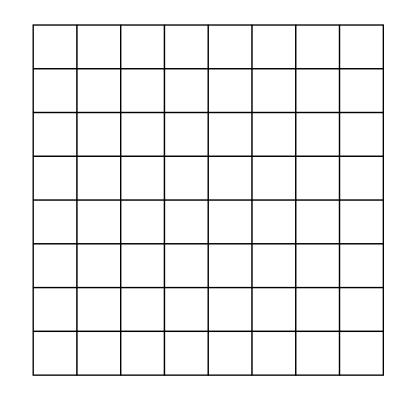
..::SOLUTION:...: Solvable in 2 moves (blocks positions: {(6, 2): <Color: blue>, (6, 4): <Color: blue>, (6, 6): <Color: blue>, (7, 1): <Color: blue>, (7, 2): <Color: blue>, (7, 4): <Color: blue>,

INITIAL STATE: (MOVE 1)
Perform: move\_right at position: (6, 2):



(MOVE 2)
Perform: move\_left at position: (6, 6):

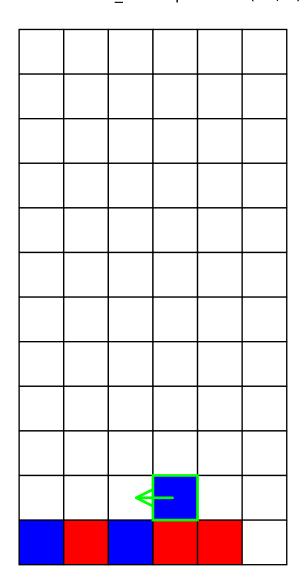


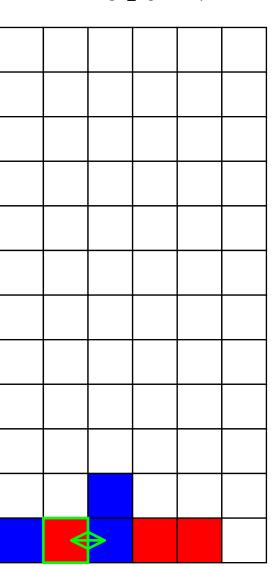


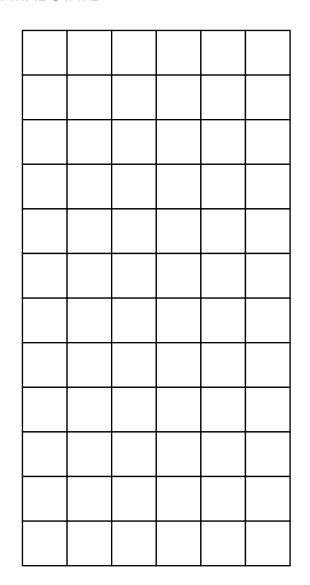
..::SOLUTION:...: Solvable in 2 moves (blocks positions: {(10, 3): <Color: blue>, (11, 0): <Color: blue>, (11, 1): <Color: red>, (11, 2): <Color: blue>, (11, 3): <Color: red>, (11, 4): <Color: blue>, (11, 2): <Color: blue>, (11, 3): <Color: red>, (11, 4): <Color: blue>, (11, 2): <Color: blue>, (11, 3): <Color: blue>, (11, 4): <Color: blue>, (11, 2): <Color: blue>, (11, 3): <Color: blue>, (11, 4): <Color: blue>, (11, 2): <Color: blue>, (11, 3): <Color: blue>, (11, 4): <Color: blue>,

INITIAL STATE: (MOVE 1)
Perform: move\_left at position: (10, 3):

(MOVE 2)
Perform: exchange\_right at position: (11, 1):



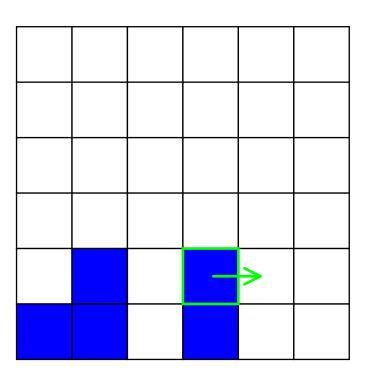




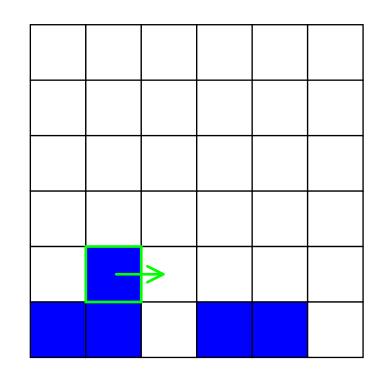
..::SOLUTION:...: Solvable in 3 moves (blocks positions: {(4, 0): <Color: blue>, (4, 3): <Color: blue>, (5, 0): <Color: blue>, (5, 1): <Color: blue>, (5, 3): <Color: blue>})

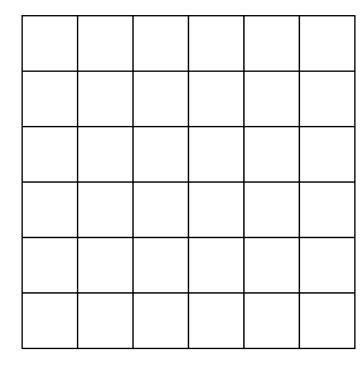
INITIAL STATE: (MOVE 1)
Perform: move\_right at position: (4, 0):

(MOVE 2)
Perform: move\_right at position: (4, 3):



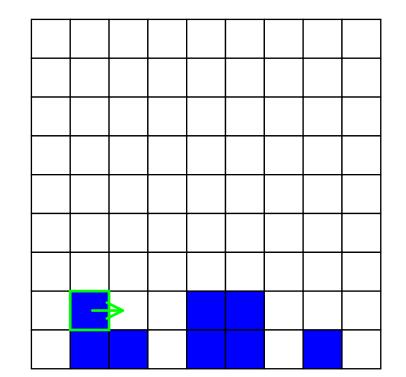
(MOVE 3)
Perform: move\_right at position: (4, 1):



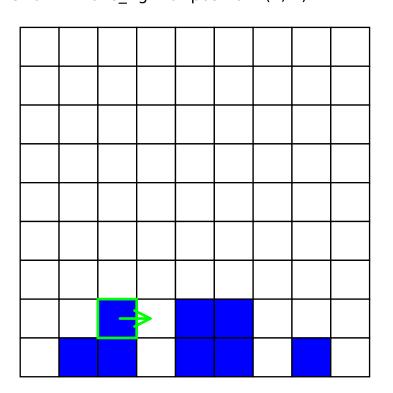


..::SOLUTION:...: Solvable in 3 moves (blocks positions: {(7, 1): <Color: blue>, (7, 4): <Color: blue>, (8, 1): <Color: blue>, (8, 2): <Color: blue>, (8, 4): <Color: blue>, (8, 5): <Color: blue>, (8, 7): <Color: blue>})

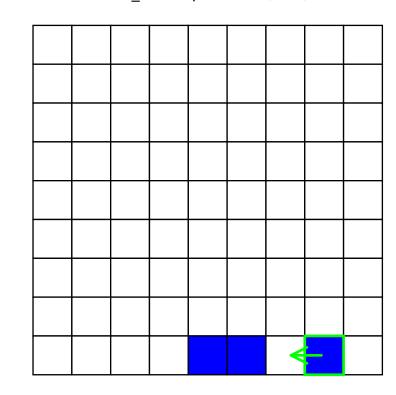
INITIAL STATE: (MOVE 1)
Perform: move\_right at position: (7, 1):

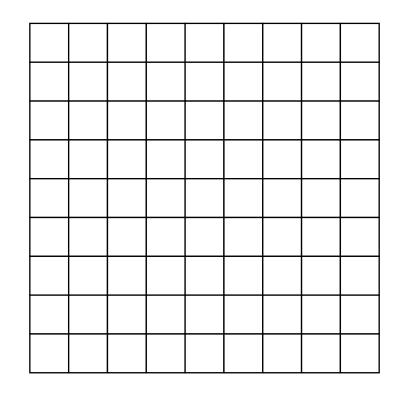


(MOVE 2)
Perform: move\_right at position: (7, 2):



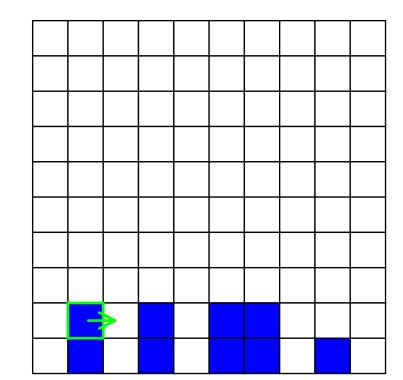
(MOVE 3)
Perform: move\_left at position: (8, 7):



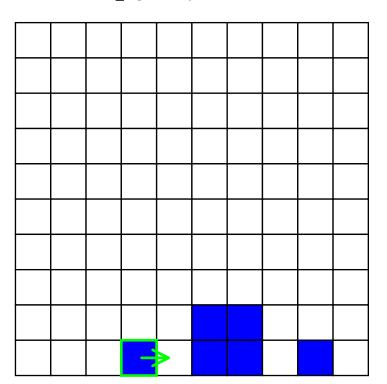


..::SOLUTION:...: Solvable in 3 moves (blocks positions: {(8, 1): <Color: blue>, (8, 3): <Color: blue>, (8, 5): <Color: blue>, (9, 1): <Color: blue>, (9, 3): <Color: blue>, (9, 5): <Color: blue>, (9, 6): <Color: blue>, (9, 8): <Color: blue>, (9, 8): <Color: blue>, (9, 1): <Color: blue>, (9, 3): <Color: blue>, (9, 5): <Color: blue>, (9, 6): <Color: blue>, (9, 8): <C

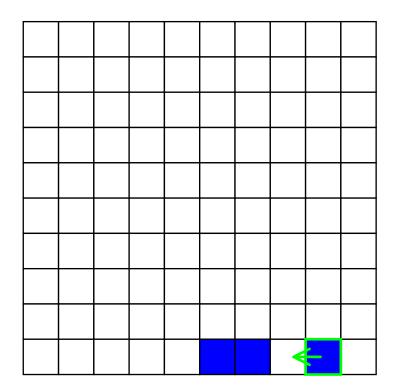
INITIAL STATE: (MOVE 1)
Perform: move\_right at position: (8, 1):

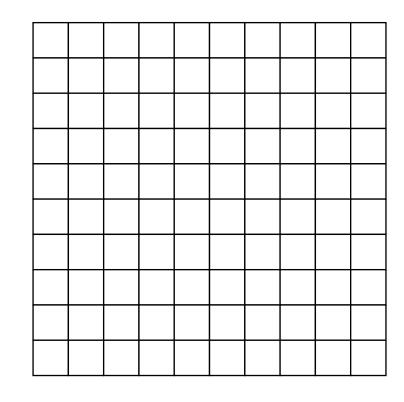


(MOVE 2)
Perform: move\_right at position: (9, 3):

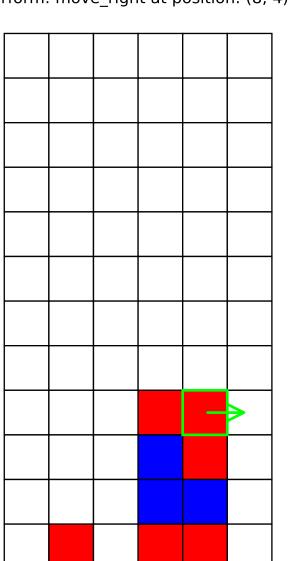


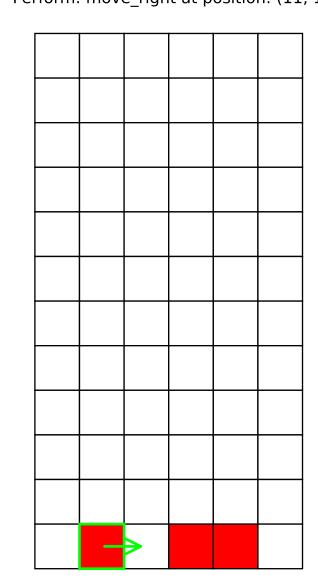
(MOVE 3)
Perform: move\_left at position: (9, 8):

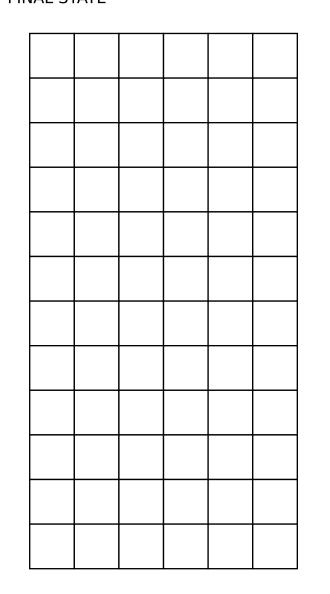




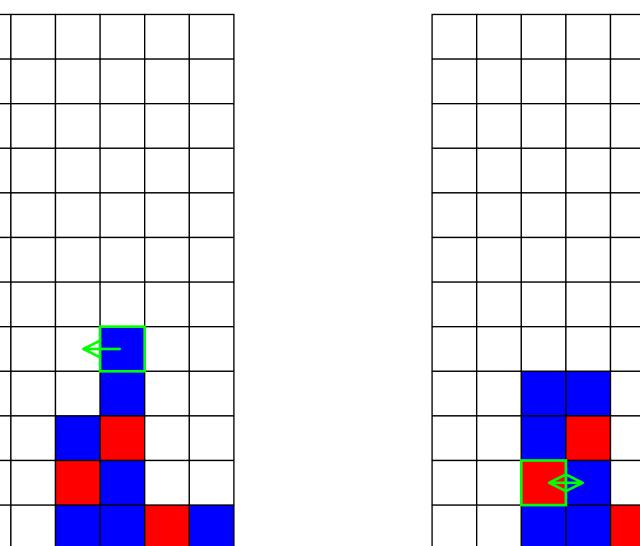
..::SOLUTION:...: Solvable in 3 moves (blocks positions: {(8, 3): <Color: red>, (8, 4): <Color: red>, (9, 3): <Color: blue>, (10, 3): <Color: blue>, (10, 4): <Color: blue>, (11, 1): <Color: red>, (11, 3): <Color: red>, (11, 4): <Color: red>, (11, 4): <Color: blue>, (10, 4): <Color: blue>, (10, 4): <Color: blue>, (11, 1): <Color: red>, (11, 3): <Color: red>, (11, 4): <Color: red>, (11, 4): <Color: blue>, (10, 4): <Color: blue>, (10, 4): <Color: blue>, (11, 1): <Color: blue>, (11, 1): <Color: red>, (11, 1): <Color: red>, (11, 4): <Color: red>, (11, 4): <Color: blue>, (10, 4): <Color: blue>, (10, 4): <Color: blue>, (11, 1): <Color: red>, (11, 1): <Color: red>, (11, 4): <Color: blue>, (11, 1): <Co

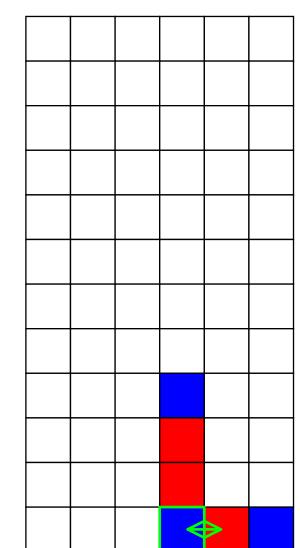


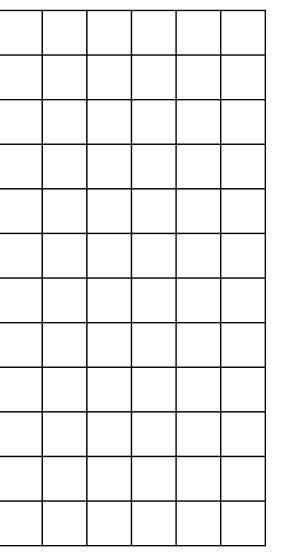




..::SOLUTION:...: Solvable in 3 moves (blocks positions: {(7, 3): <Color: blue>, (8, 3): <Color: blue>, (9, 2): <Color: blue>, (9, 3): <Color: red>, (10, 2): <Color: blue>, (11, 2): <Color: blue>, (11, 3): <Color: blue>, (11, 4): <Color: blue>, (11, 4): <Color: blue>, (11, 4): <Color: blue>, (11, 2): <Color: blue>, (11, 2): <Color: blue>, (11, 3): <Color: blue>, (11, 4): <Color: blue>, (11, 4): <Color: blue>, (11, 2): <Color: blue>, (11, 2): <Color: blue>, (11, 3): <Color: blue>, (11, 4): <Color: blue>, (11, 4): <Color: blue>, (11, 2): <Color: blue>, (11, 2): <Color: blue>, (11, 2): <Color: blue>, (11, 3): <Color: blue>, (11, 4): <Color: blue>, (11, 4): <Color: blue>, (11, 4): <Color: blue>, (11, 4): <Color: blue>, (11, 2): <Color: blue>, (11, 3): <Color: blue>, (11, 4): <Color: blue>, (







..::SOLUTION:...: Solvable in 4 moves (blocks positions: {(11, 1): <Color: blue>, (11, 3): <Color: blue>, (11, 5): <Color: blue>, (12, 3): <Color: blue>, (12, 5): <Color: blue>, (12, 5): <Color: blue>, (12, 6): <Color: blue>, (12, 8): <Color: blue>, (12, 9): <Color: blue>, (12, 1): <Color: blu (MOVE 2)
Perform: move\_right at position: (12, 3): (MOVE 3)
Perform: move\_left at position: (12, 8): (MOVE 4)
Perform: move\_right at position: (11, 9): INITIAL STATE: (MOVE 1) Perform: move\_right at position: (11, 1): FINAL STATE

..::SOLUTION:...: Solvable in 4 moves (blocks positions: {(8, 2): <Color: blue>, (9, 2): <Color: blue>, (10, 2): <Color: blue>, (11, 1): <Color: blue>, (11, 2): <Color: red>, (11, 3): <Color: blue>, (11, 5): <Color: blue>}) (MOVE 2)
Perform: exchange\_right at position: (10, 2): (MOVE 3)
Perform: move\_right at position: (11, 3): (MOVE 4)
Perform: move\_right at position: (10, 2): INITIAL STATE: (MOVE 1)
Perform: move\_left at position: (10, 2): FINAL STATE

..::SOLUTION:...: Solvable in 4 moves (blocks positions: {(6, 3): <Color: blue>, (7, 3): <Color: blue>, (10, 4): <Color: blue>, (11, 1): <Color: blue>, (11, 1): <Color: blue>, (11, 2): <Color: red>, (11, 3): <Color: red>, (11, 4): <Color: blue>, (11, 5): <Color: blue>, (11, 1): <Color: blue>, (11, 1): <Color: blue>, (11, 2): <Color: blue>, (11, 3): <Color: blue>, (11, 4): <Color: blue>, (11, 1): <Color: blue>, (11, 2): <Color: blue>, (11, 2): <Color: blue>, (11, 2): <Color: blue>, (11, 3): <Color: blue>, (11, 4): <Color: blue>, (11, 4): <Color: blue>, (11, 4): <Color: blue>, (11, 2): <Color: blue>, (11, 2): <Color: blue>, (11, 3): <Color: blue>, (11, 4): <Color: blue>, (MOVE 2)
Perform: move\_right at position: (10, 4): (MOVE 3)
Perform: exchange\_right at position: (11, 1): (MOVE 4)
Perform: exchange\_right at position: (11, 2): INITIAL STATE: (MOVE 1)
Perform: move\_right at position: (6, 3): FINAL STATE

..::SOLUTION:...: Solvable in 4 moves (blocks positions: {(7, 3): <Color: blue>, (8, 1): <Color: gray>, (9, 1): <Color: blue>, (9, 3): <Color: red>, (10, 1): <Color: red>, (10, 3): <Color: red>, (11, 1): <Color: blue>, (11, 3): <Color: gray>}) (MOVE 3)
Perform: move\_right at position: (11, 1): (MOVE 4)
Perform: exchange\_right at position: (11, 2): INITIAL STATE: (MOVE 1)
Perform: move\_left at position: (7, 3): (MOVE 2)
Perform: move\_left at position: (9, 1): FINAL STATE

..::SOLUTION:...: Solvable in 4 moves (blocks positions: {(8, 3): <Color: red>, (9, 0): <Color: blue>, (10, 0): <Color: blue>, (10, 1): <Color: blue>, (10, 3): <Color: blue>, (11, 0): <Color: gray>, (11, 1): <Color: red>, (11, 3): <Color: red>}) (MOVE 3)
Perform: move\_right at position: (9, 1): (MOVE 4)
Perform: move\_left at position: (10, 3): INITIAL STATE: (MOVE 1)
Perform: move\_left at position: (8, 3): (MOVE 2)
Perform: move\_right at position: (9, 0): FINAL STATE

..::SOLUTION:...: Solvable in 4 moves (blocks positions: {(5, 3): <Color: gray>, (6, 3): <Color: blue>, (10, 2): <Color: gray>, (10, 3): <Color: gray>, (10, 3): <Color: blue>, (11, 1): <Color: pray>, (10, 3): <Color: blue>, (11, 1): <Color: blue>, (11, 2): <Color: blue>, (11, 3): <Color: pray>, (10, 3): <Color: pray> (MOVE 2)
Perform: exchange\_right at position: (9, 2): (MOVE 3)
Perform: exchange\_right at position: (10, 2): INITIAL STATE: (MOVE 1)
Perform: move\_left at position: (6, 3): (MOVE 4)
Perform: move\_left at position: (8, 3): FINAL STATE

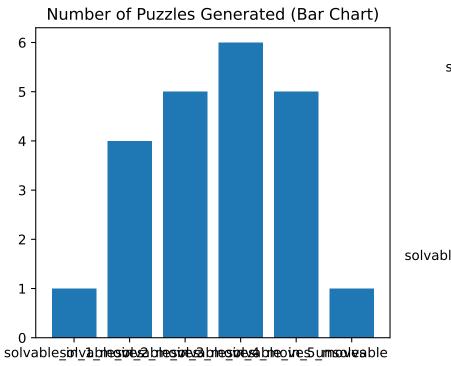
..::SOLUTION:...: Solvable in 5 moves (blocks positions:  $\{(9, 0): < Color: blue>, (9, 1): < Color: blue>, (9, 3): < Color: blue>, (10, 0): < Color: blue>, (10, 1): < Color: blue>, (10, 3): < Color: blue>, (10, 5): < Color: blue>, (10, 7): < Color: blue>, (10, 1): < Color: blue>, (10, 1): < Color: blue>, (10, 3): < Color: blue>, (10, 5): < Color: blue>, (10, 7): < Color: blue>, (10, 1): < Col$ (MOVE 2)
Perform: move\_left at position: (9, 7): (MOVE 3)
Perform: move\_right at position: (10, 0): (MOVE 4)
Perform: move\_right at position: (10, 1): (MOVE 5)
Perform: move\_left at position: (10, 5): INITIAL STATE: (MOVE 1) Perform: move\_right at position: (9, 1): FINAL STATE

..::SOLUTION:...: Solvable in 5 moves (blocks positions:  $\{(10, 2): < Color: blue>, (11, 4): < Color: blue>, (11, 6): < Color: blue>, (11, 8): < Color: blue>, (11, 10): < Color: blue>, (11, 2): < Color: blue>, (11, 4): < Color: blue>, (11, 6): < Color: blue>, (11, 8): < Color: blue>, (11, 10): < Color: blue>, (11, 2): < Color: blue>, (11, 2):$ INITIAL STATE: (MOVE 1)
Perform: move\_left at position: (10, 2): (MOVE 2)
Perform: move\_left at position: (10, 4): (MOVE 3)
Perform: move\_left at position: (10, 6): (MOVE 4)
Perform: move\_left at position: (10, 8): (MOVE 5)
Perform: move\_left at position: (10, 10): FINAL STATE

..::SOLUTION:...: Solvable in 5 moves (blocks positions: {(8, 3): <Color: red>, (9, 2): <Color: blue>, (10, 2): <Color: red>, (10, 3): <Color: blue>, (11, 2): <Color: red>, (11, 2): <Color: red>, (11, 3): <Color: red>}) (MOVE 4)
Perform: move\_right at position: (9, 2): (MOVE 5)
Perform: move\_right at position: (10, 2): INITIAL STATE: (MOVE 1)
Perform: move\_left at position: (8, 3): (MOVE 2)
Perform: move\_right at position: (11, 3): (MOVE 3)
Perform: move\_left at position: (8, 2): FINAL STATE

..::SOLUTION:...: Solvable in 5 moves (blocks positions: {(9, 3): <Color: blue>, (10, 1): <Color: blue>, (10, 1): <Color: blue>, (11, 1): <Color: blue>, (11, 1): <Color: blue>, (11, 2): <Color: blue>, (11, 3): <Color: blue>, (11, 4): <Color: blue>, (11, 5): <Color: blue>}) (MOVE 3)
Perform: exchange\_right at position: (11, 2): (MOVE 4)
Perform: exchange\_right at position: (11, 2): (MOVE 5)
Perform: move\_right at position: (10, 2): (MOVE 2)
Perform: move\_right at position: (10, 1): INITIAL STATE: (MOVE 1) Perform: move\_right at position: (9, 3): FINAL STATE

..::SOLUTION:...: Solvable in 5 moves (blocks positions: {(3, 3): <Color: blue>, (4, 3): <Color: blue>, (6, 3): <Color: blue>, (10, 2): <Color: blue>, (10, 3): <Color: pray>, (10, 3): <Color: pray>, (10, 3): <Color: pray>, (11, 2): <Color: pray>, (11, 3): <Color: pray>, (11, 4): <Color: blue>, (2, 3): <Color: pray>, (11, 4): <Color: blue>, (2, 3): <Color: pray>, (10, 3): <Color: pray>, (10, 3): <Color: pray>, (10, 3): <Color: pray>, (11, 2): <Color: pray>, ( (MOVE 3)
Perform: move\_left at position: (6, 3): (MOVE 4)
Perform: exchange\_right at position: (11, 2): (MOVE 5)
Perform: move\_right at position: (8, 3): INITIAL STATE: (MOVE 1)
Perform: move\_left at position: (3, 3): (MOVE 2)
Perform: move\_right at position: (4, 3): FINAL STATE



## Number of Puzzles Generated (Pie Chart)

