N-Queens Problem using hill climbing approach
Enter the number of queens
8
Enter the number of trials you want to want to try the algorithms
1
#Trail 1
* Q * * * * * *
* * * * * Q * *
* * * * Q * * *
Q * Q * * * * *
* * * Q * * * *
* * * * * * Q *
* * * * * * * *
* * * * * * * Q
The heuristic value of the original board is : 4
Better board found at column 0 with heuristic : 4
* Q * * * * * *
* * * * * Q * *
Q * * * Q * * *
* * Q * * * * *
* * * Q * * * *
* * * * * * Q *
* * * * * * * *
* * * * * * * Q
Better board found at column 0 with heuristic : 4
* Q * * * * * *
* * * * * Q * *
* * * * Q * * *
Q * Q * * * * *
* * * Q * * * *
* * * * * * Q *
* * * * * * * *
* * * * * * * Q
Better board found at column 0 with heuristic : 4
* Q * * * * * *
* * * * * Q * *
* * * * Q * * *
* * Q * * * * *
Q * * Q * * * *
* * * * * * Q *
* * * * * * * *
* * * * * * * Q
Better board found at column 1 with heuristic : 4
* * * * * * * *
* * * * * Q * *
* * * * Q * * *
* * Q * * * * *
Q * * Q * * * *
* * * * * * Q *
* Q * * * * * *
* * * * * * * Q
Better board found at column 1 with heuristic : 4

```
* * * * * * * *
* * * * * Q * *
* * * * Q * * *
* * Q * * * * *
Q * * Q * * * *
* * * * * * Q *
* * * * * * * *
* Q * * * * * Q
Better board found at column 2 with heuristic : 4
* * Q * * * * *
* * * * * Q * *
* * * * Q * * *
* * * * * * * *
Q * * Q * * * *
* * * * * * Q *
* * * * * * * *
* Q * * * * * Q
Better board found at column 2 with heuristic : 4
* * * * * * * *
* * * * * Q * *
* * * * Q * * *
* * Q * * * * *
Q * * Q * * * *
* * * * * * Q *
* * * * * * * *
* Q * * * * * Q
Better board found at column 3 with heuristic : 2
* * * Q * * * *
* * * * * Q * *
* * * * Q * * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * * * * * *
* Q * * * * * Q
Better board found at column 3 with heuristic : 2
* * * * * * * *
* * * * * Q * *
* * * * Q * * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q * * * *
* Q * * * * * Q
Better board found at column 4 with heuristic : 2
* * * * * * * *
* * * * * Q * *
* * * * Q * * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q * * * *
```

```
* Q * * * * * Q
Better board found at column 4 with heuristic : 2
* * * * * * * *
* * * * * Q * *
* * * * * * * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q Q * * *
* Q * * * * * Q
Better board found at column 5 with heuristic : 2
* * * * * * * *
* * * * * Q * *
* * * * * * * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q Q * * *
* Q * * * * * Q
Better board found at column 5 with heuristic : 2
* * * * * * * *
* * * * * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q Q * * *
* Q * * * * * Q
Better board found at column 6 with heuristic : 2
* * * * * * Q *
* * * * * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * * *
* * * Q Q * * *
* Q * * * * * Q
Better board found at column 6 with heuristic : 2
* * * * * * * *
* * * * * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q Q * * *
* Q * * * * * Q
Better board found at column 7 with heuristic : 2
* * * * * * * Q
* * * * * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
```

```
* * * * * * Q *
* * * Q Q * * *
* Q * * * * * *
Better board found at column 7 with heuristic : 2
* * * * * * * *
* * * * * * * Q
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q Q * * *
* Q * * * * * *
Better board found at column 7 with heuristic : 2
* * * * * * * *
* * * * * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q Q
* * * Q Q * * *
* Q * * * * * *
Better board found at column 7 with heuristic : 2
* * * * * * * *
* * * * * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q Q * * *
* Q * * * * * Q
Better board found at column 0 with heuristic : 2
* * * * * * * *
* * * * * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q Q * * *
* Q * * * * * Q
Better board found at column 1 with heuristic : 2
* Q * * * * * *
* * * * * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q Q * * *
* * * * * * * Q
Better board found at column 1 with heuristic : 2
* * * * * * * *
* Q * * * * * *
* * * * * Q * *
```

```
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q Q * * *
* * * * * * * Q
Better board found at column 1 with heuristic : 2
* * * * * * * *
* * * * * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q Q * * *
* Q * * * * * Q
Better board found at column 2 with heuristic : 2
* * Q * * * * *
* * * * * * * *
* * * * * Q * *
* * * * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q Q * * *
* Q * * * * * Q
Better board found at column 2 with heuristic : 2
* * * * * * * *
* * * * * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q Q * * *
* Q * * * * * Q
Better board found at column 3 with heuristic : 2
* * * Q * * * *
* * * * * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * * Q * * *
* Q * * * * * Q
Better board found at column 3 with heuristic : 2
* * * * * * * *
* * * Q * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * * Q * * *
* Q * * * * * Q
Better board found at column 3 with heuristic : 2
* * * * * * * *
```

```
* * * * * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q Q * * *
* Q * * * * Q
Better board found at column 4 with heuristic : 2
* * * * Q * * *
* * * * * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q * * * *
* Q * * * * Q
Better board found at column 4 with heuristic : 2
* * * * * * * *
* * * * * * * *
* * * * Q Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q * * * *
* Q * * * * Q
Better board found at column 4 with heuristic : 2
* * * * * * * *
* * * * * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q Q * * *
* Q * * * * Q
Better board found at column 5 with heuristic : 2
* * * * * * * *
* * * * * Q * *
* * * * * * * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q Q * * *
* Q * * * * Q
Better board found at column 5 with heuristic : 2
* * * * * * * *
* * * * * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q Q * * *
* Q * * * * Q
```

```
Better board found at column 6 with heuristic : 2
* * * * * * Q *
* * * * * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * * *
* * * Q Q * * *
* Q * * * * * Q
Better board found at column 6 with heuristic : 2
* * * * * * * *
* * * * * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q Q * * *
* Q * * * * * Q
Better board found at column 7 with heuristic : 2
* * * * * * * Q
* * * * * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q Q * * *
* Q * * * * * *
Better board found at column 7 with heuristic : 2
* * * * * * * *
* * * * * * * Q
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q Q * * *
* Q * * * * * *
Better board found at column 7 with heuristic : 2
* * * * * * * *
* * * * * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q Q
* * * Q Q * * *
* Q * * * * * *
Better board found at column 7 with heuristic : 2
* * * * * * * *
* * * * * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
```

```
* * * Q Q * * *
* Q * * * * * Q
Better board found at column 0 with heuristic : 2
* * * * * * * *
* * * * * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q Q * * *
* Q * * * * * Q
Better board found at column 1 with heuristic : 2
* Q * * * * * *
* * * * * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q Q * * *
* * * * * * * Q
Better board found at column 1 with heuristic : 2
* * * * * * * *
* Q * * * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q Q * * *
* * * * * * * Q
Better board found at column 1 with heuristic : 2
* * * * * * * *
* * * * * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q Q * * *
* Q * * * * * Q
Better board found at column 2 with heuristic : 2
* * Q * * * * *
* * * * * * * *
* * * * * Q * *
* * * * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q Q * * *
* Q * * * * * Q
Better board found at column 2 with heuristic : 2
* * * * * * * *
* * * * * * * *
* * * * * Q * *
* * Q * * * * *
```

```
Q * * * * * * *
* * * * * * Q *
* * * Q Q * * *
* Q * * * * * Q
Better board found at column 3 with heuristic : 2
* * * Q * * * *
* * * * * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * * Q * * *
* Q * * * * * Q
Better board found at column 3 with heuristic : 2
* * * * * * * *
* * * Q * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * * Q * * *
* Q * * * * * Q
Better board found at column 3 with heuristic : 2
* * * * * * * *
* * * * * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q Q * * *
* Q * * * * * Q
Better board found at column 4 with heuristic : 2
* * * * Q * * *
* * * * * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q * * * *
* Q * * * * * Q
Better board found at column 4 with heuristic : 2
* * * * * * * *
* * * * * * * *
* * * * Q Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q * * * *
* Q * * * * * Q
Better board found at column 4 with heuristic : 2
* * * * * * * *
* * * * * * * *
```

```
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q Q * * *
* Q * * * * * Q
Better board found at column 5 with heuristic : 2
* * * * * * * *
* * * * * Q * *
* * * * * * * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q Q * * *
* Q * * * * * Q
Better board found at column 5 with heuristic : 2
* * * * * * * *
* * * * * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q Q * * *
* Q * * * * * Q
Better board found at column 6 with heuristic : 2
* * * * * * Q *
* * * * * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * * *
* * * Q Q * * *
* Q * * * * * Q
Better board found at column 6 with heuristic : 2
* * * * * * * *
* * * * * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q Q * * *
* Q * * * * * Q
Better board found at column 7 with heuristic : 2
* * * * * * * Q
* * * * * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q Q * * *
* Q * * * * * *
Better board found at column 7 with heuristic : 2
```

```
* * * * * * * *
* * * * * * * Q
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q Q * * *
* Q * * * * * *
Better board found at column 7 with heuristic : 2
* * * * * * * *
* * * * * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q Q
* * * Q Q * * *
* Q * * * * * *
Better board found at column 7 with heuristic : 2
* * * * * * * *
* * * * * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q Q * * *
* Q * * * * * Q
Better board found at column 0 with heuristic : 2
* * * * * * * *
* * * * * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q Q * * *
* Q * * * * * Q
Better board found at column 1 with heuristic : 2
* Q * * * * * *
* * * * * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q Q * * *
* * * * * * * Q
Better board found at column 1 with heuristic : 2
* * * * * * * *
* Q * * * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q Q * * *
```

```
* * * * * * * Q
Better board found at column 1 with heuristic : 2
* * * * * * * *
* * * * * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q Q * * *
* Q * * * * * Q
Better board found at column 2 with heuristic : 2
* * Q * * * * *
* * * * * * * *
* * * * * Q * *
* * * * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q Q * * *
* Q * * * * * Q
Better board found at column 2 with heuristic : 2
* * * * * * * *
* * * * * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q Q * * *
* Q * * * * * Q
Better board found at column 3 with heuristic : 2
* * * Q * * * *
* * * * * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * * Q * * *
* Q * * * * * Q
Better board found at column 3 with heuristic : 2
* * * * * * * *
* * * Q * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * * Q * * *
* Q * * * * * Q
Better board found at column 3 with heuristic : 2
* * * * * * * *
* * * * * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
```

```
* * * * * * Q *
* * * Q Q * * *
* Q * * * * * Q
Better board found at column 4 with heuristic : 2
* * * * Q * * *
* * * * * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q * * * *
* Q * * * * * Q
Better board found at column 4 with heuristic : 2
* * * * * * * *
* * * * * * * *
* * * * Q Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q * * * *
* Q * * * * * Q
Better board found at column 4 with heuristic : 2
* * * * * * * *
* * * * * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q Q * * *
* Q * * * * * Q
Better board found at column 5 with heuristic : 2
* * * * * * * *
* * * * * Q * *
* * * * * * * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q Q * * *
* Q * * * * * Q
Better board found at column 5 with heuristic : 2
* * * * * * * *
* * * * * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q Q * * *
* Q * * * * * Q
Better board found at column 6 with heuristic : 2
* * * * * * Q *
* * * * * * * *
* * * * * Q * *
```

```
* * Q * * * * *
Q * * * * * * *
* * * * * * * *
* * * Q Q * * *
* Q * * * * * Q
Better board found at column 6 with heuristic : 2
* * * * * * * *
* * * * * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q Q * * *
* Q * * * * * Q
Better board found at column 7 with heuristic : 2
* * * * * * * Q
* * * * * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q Q * * *
* Q * * * * * *
Better board found at column 7 with heuristic : 2
* * * * * * * *
* * * * * * * Q
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q Q * * *
* Q * * * * * *
Better board found at column 7 with heuristic : 2
* * * * * * * *
* * * * * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q Q
* * * Q Q * * *
* Q * * * * * *
Better board found at column 7 with heuristic : 2
* * * * * * * *
* * * * * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q Q * * *
* Q * * * * * Q
Better board found at column 0 with heuristic : 2
* * * * * * * *
```

```
* * * * * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q Q * * *
* Q * * * * * Q
Better board found at column 1 with heuristic : 2
* Q * * * * * *
* * * * * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q Q * * *
* * * * * * * Q
Better board found at column 1 with heuristic : 2
* * * * * * * *
* Q * * * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q Q * * *
* * * * * * * Q
Better board found at column 1 with heuristic : 2
* * * * * * * *
* * * * * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q Q * * *
* Q * * * * * Q
Better board found at column 2 with heuristic : 2
* * Q * * * * *
* * * * * * * *
* * * * * Q * *
* * * * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q Q * * *
* Q * * * * * Q
Better board found at column 2 with heuristic : 2
* * * * * * * *
* * * * * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q Q * * *
* Q * * * * * Q
```

Better board found at column 3 with heuristic : 2
* * * Q * * * *
* * * * * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * * Q * * *
* Q * * * * * Q
Better board found at column 3 with heuristic : 2
* * * * * * * *
* * * Q * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * * Q * * *
* Q * * * * * Q
Better board found at column 3 with heuristic : 2
* * * * * * * *
* * * * * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q Q * * *
* Q * * * * * Q
Better board found at column 4 with heuristic : 2
* * * * Q * * *
* * * * * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q * * * *
* Q * * * * * Q
Better board found at column 4 with heuristic : 2
* * * * * * * *
* * * * * * * *
* * * * Q Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q * * * *
* Q * * * * * Q
Better board found at column 4 with heuristic : 2
* * * * * * * *
* * * * * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *

```
* * * Q Q * * *
* Q * * * * * Q
Better board found at column 5 with heuristic : 2
* * * * * * * *
* * * * * Q * *
* * * * * * * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q Q * * *
* Q * * * * * Q
Better board found at column 5 with heuristic : 2
* * * * * * * *
* * * * * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q Q * * *
* Q * * * * * Q
Better board found at column 6 with heuristic : 2
* * * * * * Q *
* * * * * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * * *
* * * Q Q * * *
* Q * * * * * Q
Better board found at column 6 with heuristic : 2
* * * * * * * *
* * * * * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q Q * * *
* Q * * * * * Q
Better board found at column 7 with heuristic : 2
* * * * * * * Q
* * * * * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q Q * * *
* Q * * * * * *
Better board found at column 7 with heuristic : 2
* * * * * * * *
* * * * * * * Q
* * * * * Q * *
* * Q * * * * *
```

```
Q * * * * * * *
* * * * * * Q *
* * * Q Q * * *
* Q * * * * * *
Better board found at column 7 with heuristic : 2
* * * * * * * *
* * * * * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q Q
* * * Q Q * * *
* Q * * * * * *
Better board found at column 7 with heuristic : 2
* * * * * * * *
* * * * * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q Q * * *
* Q * * * * * Q
Better board found at column 0 with heuristic : 2
* * * * * * * *
* * * * * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q Q * * *
* Q * * * * * Q
Better board found at column 1 with heuristic : 2
* Q * * * * * *
* * * * * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q Q * * *
* * * * * * * Q
Better board found at column 1 with heuristic : 2
* * * * * * * *
* Q * * * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q Q * * *
* * * * * * * Q
Better board found at column 1 with heuristic : 2
* * * * * * * *
* * * * * * * *
```

```
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q Q * * *
* Q * * * * * Q
Better board found at column 2 with heuristic : 2
* * Q * * * * *
* * * * * * * *
* * * * * Q * *
* * * * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q Q * * *
* Q * * * * * Q
Better board found at column 2 with heuristic : 2
* * * * * * * *
* * * * * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q Q * * *
* Q * * * * * Q
Better board found at column 3 with heuristic : 2
* * * Q * * * *
* * * * * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * * Q * * *
* Q * * * * * Q
Better board found at column 3 with heuristic : 2
* * * * * * * *
* * * Q * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * * Q * * *
* Q * * * * * Q
Better board found at column 3 with heuristic : 2
* * * * * * * *
* * * * * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q Q * * *
* Q * * * * * Q
Better board found at column 4 with heuristic : 2
```

```
* * * * Q * * *
* * * * * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q * * * *
* Q * * * * * Q
Better board found at column 4 with heuristic : 2
* * * * * * * *
* * * * * * * *
* * * * Q Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q * * * *
* Q * * * * * Q
Better board found at column 4 with heuristic : 2
* * * * * * * *
* * * * * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q Q * * *
* Q * * * * * Q
Better board found at column 5 with heuristic : 2
* * * * * * * *
* * * * * Q * *
* * * * * * * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q Q * * *
* Q * * * * * Q
Better board found at column 5 with heuristic : 2
* * * * * * * *
* * * * * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q Q * * *
* Q * * * * * Q
Better board found at column 6 with heuristic : 2
* * * * * * Q *
* * * * * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * * *
* * * Q Q * * *
```

```
* Q * * * * * Q
Better board found at column 6 with heuristic : 2
* * * * * * * *
* * * * * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q Q * * *
* Q * * * * * Q
Better board found at column 7 with heuristic : 2
* * * * * * * Q
* * * * * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q Q * * *
* Q * * * * * *
Better board found at column 7 with heuristic : 2
* * * * * * * *
* * * * * * * Q
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q Q * * *
* Q * * * * * *
Better board found at column 7 with heuristic : 2
* * * * * * * *
* * * * * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q Q
* * * Q Q * * *
* Q * * * * * *
Better board found at column 7 with heuristic : 2
* * * * * * * *
* * * * * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q Q * * *
* Q * * * * * Q
Better board found at column 0 with heuristic : 2
* * * * * * * *
* * * * * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
```

```
* * * * * * Q *
* * * Q Q * * *
* Q * * * * * Q
Better board found at column 1 with heuristic : 2
* Q * * * * * *
* * * * * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q Q * * *
* * * * * * * Q
Better board found at column 1 with heuristic : 2
* * * * * * * *
* Q * * * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q Q * * *
* * * * * * * Q
Better board found at column 1 with heuristic : 2
* * * * * * * *
* * * * * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q Q * * *
* Q * * * * * Q
Better board found at column 2 with heuristic : 2
* * Q * * * * *
* * * * * * * *
* * * * * Q * *
* * * * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q Q * * *
* Q * * * * * Q
Better board found at column 2 with heuristic : 2
* * * * * * * *
* * * * * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q Q * * *
* Q * * * * * Q
Better board found at column 3 with heuristic : 2
* * * Q * * * *
* * * * * * * *
* * * * * Q * *
```

```
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * * Q * * *
* Q * * * * * Q
Better board found at column 3 with heuristic : 2
* * * * * * * *
* * * Q * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * * Q * * *
* Q * * * * * Q
Better board found at column 3 with heuristic : 2
* * * * * * * *
* * * * * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q Q * * *
* Q * * * * * Q
Better board found at column 4 with heuristic : 2
* * * * Q * * *
* * * * * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q * * * *
* Q * * * * * Q
Better board found at column 4 with heuristic : 2
* * * * * * * *
* * * * * * * *
* * * * Q Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q * * * *
* Q * * * * * Q
Better board found at column 4 with heuristic : 2
* * * * * * * *
* * * * * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q Q * * *
* Q * * * * * Q
Better board found at column 5 with heuristic : 2
* * * * * * * *
```

```
* * * * * Q * *
* * * * * * * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q Q * * *
* Q * * * * Q
Better board found at column 5 with heuristic : 2
* * * * * * * *
* * * * * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q Q * * *
* Q * * * * Q
Better board found at column 6 with heuristic : 2
* * * * * * Q *
* * * * * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * * *
* * * Q Q * * *
* Q * * * * Q
Better board found at column 6 with heuristic : 2
* * * * * * * *
* * * * * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q Q * * *
* Q * * * * Q
Better board found at column 7 with heuristic : 2
* * * * * * * Q
* * * * * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q Q * * *
* Q * * * * * *
Better board found at column 7 with heuristic : 2
* * * * * * * *
* * * * * * * Q
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q Q * * *
* Q * * * * * *
```

Better board found at column 7 with heuristic : 2
* * * * * * * *
* * * * * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q Q
* * * Q Q * * *
* Q * * * * * *
Better board found at column 7 with heuristic : 2
* * * * * * * *
* * * * * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q Q * * *
* Q * * * * * Q
Better board found at column 0 with heuristic : 2
* * * * * * * *
* * * * * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q Q * * *
* Q * * * * * Q
Better board found at column 1 with heuristic : 2
* Q * * * * * *
* * * * * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q Q * * *
* * * * * * * Q
Better board found at column 1 with heuristic : 2
* * * * * * * *
* Q * * * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q Q * * *
* * * * * * * Q
Better board found at column 1 with heuristic : 2
* * * * * * * *
* * * * * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *

```
* * * Q Q * * *
* Q * * * * * Q
Better board found at column 2 with heuristic : 2
* * Q * * * * *
* * * * * * * *
* * * * * Q * *
* * * * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q Q * * *
* Q * * * * * Q
Better board found at column 2 with heuristic : 2
* * * * * * * *
* * * * * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q Q * * *
* Q * * * * * Q
Better board found at column 3 with heuristic : 2
* * * Q * * * *
* * * * * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * * Q * * *
* Q * * * * * Q
Better board found at column 3 with heuristic : 2
* * * * * * * *
* * * Q * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * * Q * * *
* Q * * * * * Q
Better board found at column 3 with heuristic : 2
* * * * * * * *
* * * * * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q Q * * *
* Q * * * * * Q
Better board found at column 4 with heuristic : 2
* * * * Q * * *
* * * * * * * *
* * * * * Q * *
* * Q * * * * *
```

```
Q * * * * * * *
* * * * * * Q *
* * * Q * * * *
* Q * * * * * Q
Better board found at column 4 with heuristic : 2
* * * * * * * *
* * * * * * * *
* * * * Q Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q * * * *
* Q * * * * * Q
Better board found at column 4 with heuristic : 2
* * * * * * * *
* * * * * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q Q * * *
* Q * * * * * Q
Better board found at column 5 with heuristic : 2
* * * * * * * *
* * * * * Q * *
* * * * * * * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q Q * * *
* Q * * * * * Q
Better board found at column 5 with heuristic : 2
* * * * * * * *
* * * * * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q Q * * *
* Q * * * * * Q
Better board found at column 6 with heuristic : 2
* * * * * * Q *
* * * * * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * * *
* * * Q Q * * *
* Q * * * * * Q
Better board found at column 6 with heuristic : 2
* * * * * * * *
* * * * * * * *
```

```
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q Q * * *
* Q * * * * * Q
Better board found at column 7 with heuristic : 2
* * * * * * * Q
* * * * * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q Q * * *
* Q * * * * * *
Better board found at column 7 with heuristic : 2
* * * * * * * *
* * * * * * * Q
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q Q * * *
* Q * * * * * *
Better board found at column 7 with heuristic : 2
* * * * * * * *
* * * * * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q Q
* * * Q Q * * *
* Q * * * * * *
Better board found at column 7 with heuristic : 2
* * * * * * * *
* * * * * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q Q * * *
* Q * * * * * Q
Better board found at column 0 with heuristic : 2
* * * * * * * *
* * * * * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q Q * * *
* Q * * * * * Q
Better board found at column 1 with heuristic : 2
```

```
* Q * * * * * *
* * * * * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q Q * * *
* * * * * * * Q
Better board found at column 1 with heuristic : 2
* * * * * * * *
* Q * * * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q Q * * *
* * * * * * * Q
Better board found at column 1 with heuristic : 2
* * * * * * * *
* * * * * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q Q * * *
* Q * * * * * Q
Better board found at column 2 with heuristic : 2
* * Q * * * * *
* * * * * * * *
* * * * * Q * *
* * * * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q Q * * *
* Q * * * * * Q
Better board found at column 2 with heuristic : 2
* * * * * * * *
* * * * * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q Q * * *
* Q * * * * * Q
Better board found at column 3 with heuristic : 2
* * * Q * * * *
* * * * * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * * Q * * *
```

```
* Q * * * * * Q
Better board found at column 3 with heuristic : 2
* * * * * * * *
* * * Q * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * * Q * * *
* Q * * * * * Q
Better board found at column 3 with heuristic : 2
* * * * * * * *
* * * * * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q Q * * *
* Q * * * * * Q
Better board found at column 4 with heuristic : 2
* * * * Q * * *
* * * * * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q * * * *
* Q * * * * * Q
Better board found at column 4 with heuristic : 2
* * * * * * * *
* * * * * * * *
* * * * Q Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q * * * *
* Q * * * * * Q
Better board found at column 4 with heuristic : 2
* * * * * * * *
* * * * * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q Q * * *
* Q * * * * * Q
Better board found at column 5 with heuristic : 2
* * * * * * * *
* * * * * Q * *
* * * * * * * *
* * Q * * * * *
Q * * * * * * *
```

```
* * * * * * Q *
* * * Q Q * * *
* Q * * * * Q
Better board found at column 5 with heuristic : 2
* * * * * * * *
* * * * * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q Q * * *
* Q * * * * Q
Better board found at column 6 with heuristic : 2
* * * * * * Q *
* * * * * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * * *
* * * Q Q * * *
* Q * * * * Q
Better board found at column 6 with heuristic : 2
* * * * * * * *
* * * * * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q Q * * *
* Q * * * * Q
Better board found at column 7 with heuristic : 2
* * * * * * * Q
* * * * * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q Q * * *
* Q * * * * *
Better board found at column 7 with heuristic : 2
* * * * * * * *
* * * * * * * Q
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q Q * * *
* Q * * * * *
Better board found at column 7 with heuristic : 2
* * * * * * * *
* * * * * * * *
* * * * * Q * *
```

```
* * Q * * * * *
Q * * * * * * *
* * * * * * Q Q
* * * Q Q * * *
* Q * * * * * *
Better board found at column 7 with heuristic : 2
* * * * * * * *
* * * * * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q Q * * *
* Q * * * * * Q
Better board found at column 0 with heuristic : 2
* * * * * * * *
* * * * * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q Q * * *
* Q * * * * * Q
Better board found at column 1 with heuristic : 2
* Q * * * * * *
* * * * * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q Q * * *
* * * * * * * Q
Better board found at column 1 with heuristic : 2
* * * * * * * *
* Q * * * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q Q * * *
* * * * * * * Q
Better board found at column 1 with heuristic : 2
* * * * * * * *
* * * * * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q Q * * *
* Q * * * * * Q
Better board found at column 2 with heuristic : 2
* * Q * * * * *
```

```
* * * * * * * *
* * * * * Q * *
* * * * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q Q * * *
* Q * * * * Q
Better board found at column 2 with heuristic : 2
* * * * * * * *
* * * * * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q Q * * *
* Q * * * * Q
Better board found at column 3 with heuristic : 2
* * * Q * * * *
* * * * * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * * Q * * *
* Q * * * * Q
Better board found at column 3 with heuristic : 2
* * * * * * * *
* * * Q * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * * Q * * *
* Q * * * * Q
Better board found at column 3 with heuristic : 2
* * * * * * * *
* * * * * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q Q * * *
* Q * * * * Q
Better board found at column 4 with heuristic : 2
* * * * Q * * *
* * * * * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q * * * *
* Q * * * * Q
```

```
Better board found at column 4 with heuristic : 2
* * * * * * * *
* * * * * * * *
* * * * Q Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q * * * *
* Q * * * * * Q
Better board found at column 4 with heuristic : 2
* * * * * * * *
* * * * * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q Q * * *
* Q * * * * * Q
Better board found at column 5 with heuristic : 2
* * * * * * * *
* * * * * Q * *
* * * * * * * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q Q * * *
* Q * * * * * Q
Better board found at column 5 with heuristic : 2
* * * * * * * *
* * * * * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q Q * * *
* Q * * * * * Q
Better board found at column 6 with heuristic : 2
* * * * * * Q *
* * * * * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * * *
* * * Q Q * * *
* Q * * * * * Q
Better board found at column 6 with heuristic : 2
* * * * * * * *
* * * * * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
```

```
* * * Q Q * * *
* Q * * * * * Q
Better board found at column 7 with heuristic : 2
* * * * * * * Q
* * * * * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q Q * * *
* Q * * * * * *
Better board found at column 7 with heuristic : 2
* * * * * * * *
* * * * * * * Q
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q Q * * *
* Q * * * * * *
Better board found at column 7 with heuristic : 2
* * * * * * * *
* * * * * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q Q
* * * Q Q * * *
* Q * * * * * *
Better board found at column 7 with heuristic : 2
* * * * * * * *
* * * * * * * *
* * * * * Q * *
* * Q * * * * *
Q * * * * * * *
* * * * * * Q *
* * * Q Q * * *
* Q * * * * * Q
Randomly restarting...
* * * * * * * *
* * * * * * * Q
Q * * * * Q * *
* * * * Q * Q *
* * * * * * * *
* * Q Q * * * *
* Q * * * * * *
* * * * * * * *
The heuristic value of the original board is : 12
Better board found at column 0 with heuristic : 10
Q * * * * * * *
* * * * * * * Q
* * * * * Q * *
```

```
* * * * Q * Q *
* * * * * * * *
* * Q Q * * * *
* Q * * * * * *
* * * * * * * *
Better board found at column 0 with heuristic : 10
* * * * * * * *
* * * * * * * Q
* * * * * Q * *
* * * * Q * Q *
Q * * * * * * *
* * Q Q * * * *
* Q * * * * * *
* * * * * * * *
Better board found at column 1 with heuristic : 8
* Q * * * * * *
* * * * * * * Q
* * * * * Q * *
* * * * Q * Q *
Q * * * * * * *
* * Q Q * * * *
* * * * * * * *
* * * * * * * *
Better board found at column 1 with heuristic : 8
* * * * * * * *
* Q * * * * * Q
* * * * * Q * *
* * * * Q * Q *
Q * * * * * * *
* * Q Q * * * *
* * * * * * * *
* * * * * * * *
Better board found at column 1 with heuristic : 8
* * * * * * * *
* * * * * * * Q
* Q * * Q * * *
* * * * Q * Q *
Q * * * * * * *
* * Q Q * * * *
* * * * * * * *
* * * * * * * *
Better board found at column 2 with heuristic : 5
* * Q * * * * *
* * * * * * * Q
* Q * * Q * * *
* * * * Q * Q *
Q * * * * * * *
* * * Q * * * *
* * * * * * * *
* * * * Q * * *
Better board found at column 3 with heuristic : 5
* * Q * * * * *
```

```
* * * * * * * Q
* Q * * * Q * *
* * * * Q * Q *
Q * * * * * * *
* * * Q * * * *
* * * * * * * *
* * * * * * * *
Better board found at column 3 with heuristic : 5
* * Q * * * * *
* * * * * * * Q
* Q * * * Q * *
* * * * Q * Q *
Q * * * * * * *
* * * * * * * *
* * * Q * * * *
* * * * * * * *
Better board found at column 3 with heuristic : 5
* * Q * * * * *
* * * * * * * Q
* Q * * * Q * *
* * * * Q * Q *
Q * * * * * * *
* * * * * * * *
* * * * * * * *
* * * Q * * * *
Better board found at column 4 with heuristic : 5
* * Q * Q * * *
* * * * * * * Q
* Q * * * Q * *
* * * * * * Q *
Q * * * * * * *
* * * * * * * *
* * * * * * * *
* * * Q * * * *
Better board found at column 4 with heuristic : 5
* * Q * * * * *
* * * * * * * Q
* Q * * * Q * *
* * * * Q * Q *
Q * * * * * * *
* * * * * * * *
* * * * * * * *
* * * Q * * * *
Better board found at column 4 with heuristic : 5
* * Q * * * * *
* * * * * * * Q
* Q * * * Q * *
* * * * * * Q *
Q * * * Q * * *
* * * * * * * *
* * * * * * * *
* * * Q * * * *
```

```
Better board found at column 4 with heuristic : 5
* * Q * * * * *
* * * * * * * Q
* Q * * * Q * *
* * * * * * Q *
Q * * * * * * *
* * * * Q * * *
* * * * * * * *
* * * Q * * * *
Better board found at column 4 with heuristic : 4
* * Q * * * * *
* * * * * * * Q
* Q * * * Q * *
* * * * * * Q *
Q * * * * * * *
* * * * * * * *
* * * * Q * * *
* * * Q * * * *
Better board found at column 4 with heuristic : 4
* * Q * * * * *
* * * * * * * Q
* Q * * * Q * *
* * * * * * Q *
Q * * * * * * *
* * * * * * * *
* * * * * * * *
* * * Q Q * * *
Better board found at column 5 with heuristic : 3
* * Q * * Q * *
* * * * * * * Q
* Q * * * * * *
* * * * * * Q *
Q * * * * * * *
* * * * * * * *
* * * * * * * *
* * * Q Q * * *
Better board found at column 5 with heuristic : 3
* * Q * * * * *
* * * * * Q * Q
* Q * * * * * *
* * * * * * Q *
Q * * * * * * *
* * * * * * * *
* * * * * * * *
* * * Q Q * * *
Better board found at column 5 with heuristic : 3
* * Q * * * * *
* * * * * * * Q
* Q * * * * * *
* * * * * * Q *
Q * * * * * * *
* * * * * Q * *
```

```
* * * * * * * *
* * * Q Q * * *
Better board found at column 6 with heuristic : 3
* * Q * * * * *
* * * * * * * Q
* Q * * * * * *
* * * * * * Q *
Q * * * * * * *
* * * * * Q * *
* * * * * * * *
* * * Q Q * * *
Better board found at column 7 with heuristic : 3
* * Q * * * * *
* * * * * * * Q
* Q * * * * * *
* * * * * * Q *
Q * * * * * * *
* * * * * Q * *
* * * * * * * *
* * * Q Q * * *
Better board found at column 7 with heuristic : 3
* * Q * * * * *
* * * * * * * *
* Q * * * * * *
* * * * * * Q *
Q * * * * * * *
* * * * * Q * *
* * * * * * * Q
* * * Q Q * * *
Better board found at column 0 with heuristic : 3
* * Q * * * * *
Q * * * * * * *
* Q * * * * * *
* * * * * * Q *
* * * * * * * *
* * * * * Q * *
* * * * * * * Q
* * * Q Q * * *
Better board found at column 0 with heuristic : 3
* * Q * * * * *
* * * * * * * *
* Q * * * * * *
* * * * * * Q *
Q * * * * * * *
* * * * * Q * *
* * * * * * * Q
* * * Q Q * * *
Better board found at column 0 with heuristic : 3
* * Q * * * * *
* * * * * * * *
* Q * * * * * *
* * * * * * Q *
```

```
* * * * * * * *
Q * * * * Q * *
* * * * * * * Q
* * * Q Q * * *
Better board found at column 0 with heuristic : 3
* * Q * * * * *
* * * * * * * *
* Q * * * * * *
* * * * * * Q *
* * * * * * * *
* * * * * Q * *
Q * * * * * * Q
* * * Q Q * * *
Better board found at column 1 with heuristic : 3
* * Q * * * * *
* * * * * * * *
* Q * * * * * *
* * * * * * Q *
* * * * * * * *
* * * * * Q * *
Q * * * * * * Q
* * * Q Q * * *
Better board found at column 3 with heuristic : 2
* * Q * * * * *
* * * Q * * * *
* Q * * * * * *
* * * * * * Q *
* * * * * * * *
* * * * * Q * *
Q * * * * * * Q
* * * * Q * * *
Better board found at column 3 with heuristic : 2
* * Q * * * * *
* * * * * * * *
* Q * * * * * *
* * * * * * Q *
* * * Q * * * *
* * * * * Q * *
Q * * * * * * Q
* * * * Q * * *
Better board found at column 3 with heuristic : 2
* * Q * * * * *
* * * * * * * *
* Q * * * * * *
* * * * * * Q *
* * * * * * * *
* * * Q * Q * *
Q * * * * * * Q
* * * * Q * * *
Better board found at column 4 with heuristic : 2
* * Q * * * * *
* * * * * * * *
```

```
* Q * * * * * *
* * * * * * Q *
* * * * * * * *
* * * Q * Q * *
Q * * * * * * Q
* * * * Q * * *
Better board found at column 5 with heuristic : 2
* * Q * * Q * *
* * * * * * * *
* Q * * * * * *
* * * * * * Q *
* * * * * * * *
* * * Q * * * *
Q * * * * * * Q
* * * * Q * * *
Better board found at column 5 with heuristic : 2
* * Q * * * * *
* * * * * Q * *
* Q * * * * * *
* * * * * * Q *
* * * * * * * *
* * * Q * * * *
Q * * * * * * Q
* * * * Q * * *
Better board found at column 5 with heuristic : 2
* * Q * * * * *
* * * * * * * *
* Q * * * * * *
* * * * * * Q *
* * * * * * * *
* * * Q * Q * *
Q * * * * * * Q
* * * * Q * * *
Better board found at column 6 with heuristic : 2
* * Q * * * * *
* * * * * * Q *
* Q * * * * * *
* * * * * * * *
* * * * * * * *
* * * Q * Q * *
Q * * * * * * Q
* * * * Q * * *
Better board found at column 6 with heuristic : 2
* * Q * * * * *
* * * * * * * *
* Q * * * * * *
* * * * * * Q *
* * * * * * * *
* * * Q * Q * *
Q * * * * * * Q
* * * * Q * * *
Better board found at column 7 with heuristic : 2
```

```
* * Q * * * * Q
* * * * * * * *
* Q * * * * * *
* * * * * * Q *
* * * * * * * *
* * * Q * Q * *
Q * * * * * * *
* * * * Q * * *
Better board found at column 7 with heuristic : 2
* * Q * * * * *
* * * * * * * Q
* Q * * * * * *
* * * * * * Q *
* * * * * * * *
* * * Q * Q * *
Q * * * * * * *
* * * * Q * * *
Better board found at column 7 with heuristic : 2
* * Q * * * * *
* * * * * * * *
* Q * * * * * *
* * * * * * Q *
* * * * * * * *
* * * Q * Q * *
Q * * * * * * Q
* * * * Q * * *
Better board found at column 0 with heuristic : 2
* * Q * * * * *
Q * * * * * * *
* Q * * * * * *
* * * * * * Q *
* * * * * * * *
* * * Q * Q * *
* * * * * * * Q
* * * * Q * * *
Better board found at column 0 with heuristic : 1
* * Q * * * * *
* * * * * * * *
* Q * * * * * *
* * * * * * Q *
Q * * * * * * *
* * * Q * Q * *
* * * * * * * Q
* * * * Q * * *
Better board found at column 1 with heuristic : 1
* * Q * * * * *
* * * * * * * *
* Q * * * * * *
* * * * * * Q *
Q * * * * * * *
* * * Q * Q * *
* * * * * * * Q
```

```
* * * * Q * * *
Better board found at column 3 with heuristic : 1
* * Q * * * * *
* * * * * * * *
* Q * * * * * *
* * * * * * Q *
Q * * * * * * *
* * * Q * Q * *
* * * * * * * Q
* * * * Q * * *
Better board found at column 4 with heuristic : 1
* * Q * * * * *
* * * * * * * *
* Q * * * * * *
* * * * * * Q *
Q * * * * * * *
* * * Q * Q * *
* * * * * * * Q
* * * * Q * * *
Better board found at column 5 with heuristic : 1
* * Q * * Q * *
* * * * * * * *
* Q * * * * * *
* * * * * * Q *
Q * * * * * * *
* * * Q * * * *
* * * * * * * Q
* * * * Q * * *
Better board found at column 5 with heuristic : 0
* * Q * * * * *
* * * * * Q * *
* Q * * * * * *
* * * * * * Q *
Q * * * * * * *
* * * Q * * * *
* * * * * * * Q
* * * * Q * * *
Better board found at column 6 with heuristic : 0
* * Q * * * * *
* * * * * Q * *
* Q * * * * * *
* * * * * * Q *
Q * * * * * * *
* * * Q * * * *
* * * * * * * Q
* * * * Q * * *
Better board found at column 7 with heuristic : 0
* * Q * * * * *
* * * * * Q * *
* Q * * * * * *
* * * * * * Q *
Q * * * * * * *
```

```
* * * Q * * * *
* * * * * * * Q
* * * * Q * * *
Solution found
* * Q * * * * *
* * * * * Q * *
* Q * * * * * *
* * * * * * Q *
Q * * * * * * *
* * * Q * * * *
* * * * * * * Q
* * * * Q * * *
```