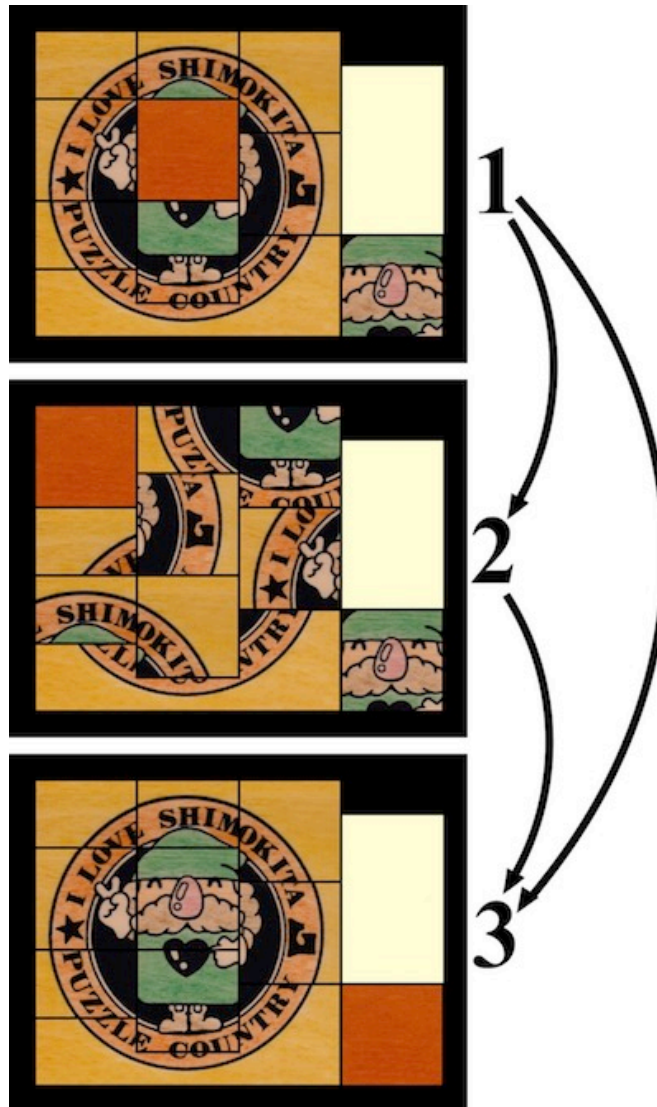# Shimokita

Designed and mad by Minoru Abe, circa 1985.
(cardboard box 5+1/4" x 6.25" x 7/8", 10 wood pieces, blue keeper, and directions)

The directions show three positions, giving rise to three problems:

Shimokita Solutions

Similar to the *Moota-Kun* puzzle by the same designer, a tricky solution is made more difficult because it can be cumbersome to keep track of pieces that are labeled by portions of a drawing.

The big piece at the bottom has a nook that makes it natural to perform a *capture movement* where it slides left or right with another piece in its nook. Here, we limit capture movement to one of the small pieces being carried, where when in the nook the small piece does not extend beyond the bounding rectangle of the big piece.

The following three pages show solutions for the three Shimokita problems where capture movement is allowed. Note, however, that by using move moves, without any capture movement Shimokita 1 -> 3 can be solved in 58 rectilinear moves, Shimokita 1 -> 2 in 55 rectilinear moves, and Shimokita 2 -> 3 in 65 rectilinear moves.

The figures here have piece labels added to match the solutions on the following pages. In all three solutions, the big piece labeled *X*, stays on the bottom and moves only two times.

For Shimokita 1 -> 3, here are positions 13 and 39 just after each move of *X*:
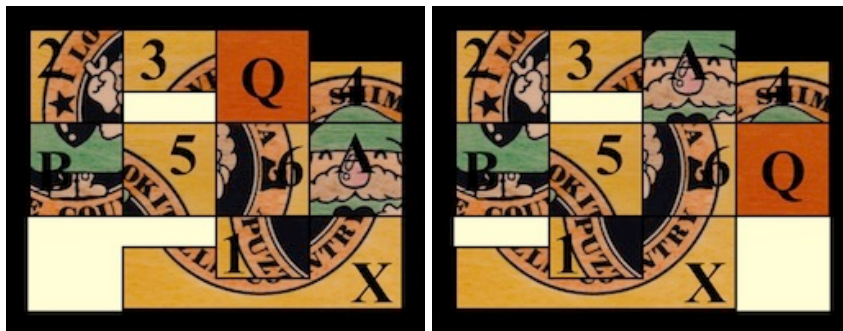
For Shimokita 1 -> 2, here are positions 23 and 37 just after each move of *X*:
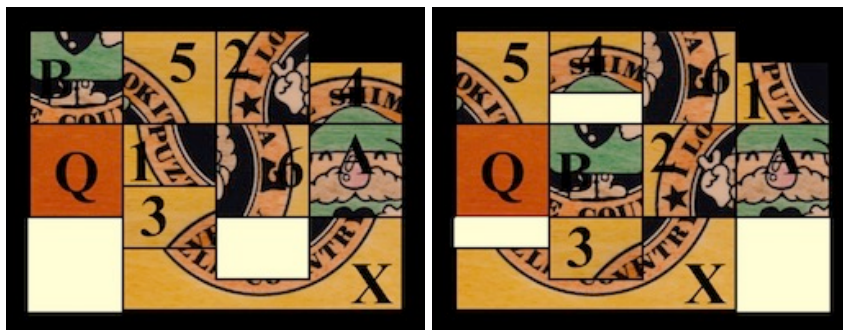
For the 2 -> 3 problem, here are positions 20 and 46 just after each move of *X*:

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Shimokita Solution, 1 -> 3 (page 1/2)

Here is a solution of 51 rectilinear moves (72 straight-line moves):

```
0:                          1. Move 6:                  2. Move 5:                  3. Move 4:
3 3 3 4 4 4 5 5 5 $ $ $      3 3 3 4 4 4 5 5 5 $ $ $      3 3 3 4 4 4       $ $ $      3 3 3             $ $ $
3 3 3 4 4 4 5 5 5            3 3 3 4 4 4 5 5 5            3 3 3 4 4 4                  3 3 3             4 4 4
2 2 2 Q Q Q 5 5 5            2 2 2 Q Q Q 5 5 5            2 2 2 Q Q Q                  2 2 2 Q Q Q       4 4 4
2 2 2 Q Q Q 6 6 6            2 2 2 Q Q Q       6 6 6      2 2 2 Q Q Q 5 5 5 6 6 6      2 2 2 Q Q Q 5 5 5 6 6 6
2 2 2 Q Q Q 6 6 6            2 2 2 Q Q Q       6 6 6      2 2 2 Q Q Q 5 5 5 6 6 6      2 2 2 Q Q Q 5 5 5 6 6 6
1 1 1 B B B 6 6 6            1 1 1 B B B       6 6 6      1 1 1 B B B 5 5 5 6 6 6      1 1 1 B B B 5 5 5 6 6 6
1 1 1 B B B X X X A A A      1 1 1 B B B X X X A A A      1 1 1 B B B X X X A A A      1 1 1 B B B X X X A A A
X X X B B B X X X A A A      X X X B B B X X X A A A      X X X B B B X X X A A A      X X X B B B X X X A A A
X X X X X X X X X A A A      X X X X X X X X X A A A      X X X X X X X X X A A A      X X X X X X X X X A A A

4. Move Q:                   5. Move 3:                  6. Move 2:                  7. Move 1:
3 3 3         Q Q Q $ $ $          3 3 3 Q Q Q $ $ $      2 2 2 3 3 3 Q Q Q $ $ $      2 2 2 3 3 3 Q Q Q $ $ $
3 3 3         Q Q Q 4 4 4          3 3 3 Q Q Q 4 4 4      2 2 2 3 3 3 Q Q Q 4 4 4      2 2 2 3 3 3 Q Q Q 4 4 4
2 2 2         Q Q Q 4 4 4    2 2 2       Q Q Q 4 4 4      2 2 2       Q Q Q 4 4 4      2 2 2 1 1 1 Q Q Q 4 4 4
2 2 2         5 5 5 6 6 6    2 2 2       5 5 5 6 6 6                  5 5 5 6 6 6            1 1 1 5 5 5 6 6 6
2 2 2         5 5 5 6 6 6    2 2 2       5 5 5 6 6 6                  5 5 5 6 6 6                  5 5 5 6 6 6
1 1 1 B B B 5 5 5 6 6 6      1 1 1 B B B 5 5 5 6 6 6      1 1 1 B B B 5 5 5 6 6 6            B B B 5 5 5 6 6 6
1 1 1 B B B X X X A A A      1 1 1 B B B X X X A A A      1 1 1 B B B X X X A A A            B B B X X X A A A
X X X B B B X X X A A A      X X X B B B X X X A A A      X X X B B B X X X A A A      X X X B B B X X X A A A
X X X X X X X X X A A A      X X X X X X X X X A A A      X X X X X X X X X A A A      X X X X X X X X X A A A

8. Move B:                   9. Move 1:                  10. Move 5:                 11. Move 6:
2 2 2 3 3 3 Q Q Q $ $ $      2 2 2 3 3 3 Q Q Q $ $ $      2 2 2 3 3 3 Q Q Q $ $ $      2 2 2 3 3 3 Q Q Q $ $ $
2 2 2 3 3 3 Q Q Q 4 4 4      2 2 2 3 3 3 Q Q Q 4 4 4      2 2 2 3 3 3 Q Q Q 4 4 4      2 2 2 3 3 3 Q Q Q 4 4 4
2 2 2 1 1 1 Q Q Q 4 4 4      2 2 2       Q Q Q 4 4 4      2 2 2       Q Q Q 4 4 4      2 2 2       Q Q Q 4 4 4
      1 1 1 5 5 5 6 6 6                  5 5 5 6 6 6                  5 5 5                        5 5 5 6 6 6
B B B       5 5 5 6 6 6      B B B       5 5 5 6 6 6      B B B             6 6 6      B B B 5 5 5 6 6 6
B B B       5 5 5 6 6 6      B B B       5 5 5 6 6 6      B B B 5 5 5       6 6 6      B B B 5 5 5 6 6 6
B B B       X X X A A A      B B B 1 1 1 X X X A A A      B B B 1 1 1 X X X A A A      B B B 1 1 1 X X X A A A
X X X       X X X A A A      X X X 1 1 1 X X X A A A      X X X 1 1 1 X X X A A A      X X X 1 1 1 X X X A A A
X X X X X X X X X A A A      X X X X X X X X X A A A      X X X X X X X X X A A A      X X X X X X X X X A A A

12. Move A:                  13. Move X:                 14. Move B:                 15. Move 5:
2 2 2 3 3 3 Q Q Q $ $ $      2 2 2 3 3 3 Q Q Q $ $ $      2 2 2 3 3 3 Q Q Q $ $ $      2 2 2 3 3 3 Q Q Q $ $ $
2 2 2 3 3 3 Q Q Q 4 4 4      2 2 2 3 3 3 Q Q Q 4 4 4      2 2 2 3 3 3 Q Q Q 4 4 4      2 2 2 3 3 3 Q Q Q 4 4 4
2 2 2       Q Q Q 4 4 4      2 2 2       Q Q Q 4 4 4      2 2 2       Q Q Q 4 4 4      2 2 2       Q Q Q 4 4 4
      5 5 5 6 6 6 A A A            5 5 5 6 6 6 A A A            5 5 5 6 6 6 A A A      2 2 2       6 6 6 A A A
B B B 5 5 5 6 6 6 A A A      B B B 5 5 5 6 6 6 A A A            5 5 5 6 6 6 A A A      5 5 5       6 6 6 A A A
B B B 5 5 5 6 6 6 A A A      B B B 5 5 5 6 6 6 A A A            5 5 5 6 6 6 A A A      5 5 5       6 6 6 A A A
B B B 1 1 1 X X X            B B B       1 1 1 X X X      B B B       1 1 1 X X X      B B B       1 1 1 X X X
X X X 1 1 1 X X X            X X X 1 1 1 1 1 1 X X X      B B B X X X 1 1 1 X X X      B B B X X X 1 1 1 X X X
X X X X X X X X X            X X X X X X X X X            B B B X X X X X X X X X      B B B X X X X X X X X X

16. Move 3:                  17. Move Q:                 18. Move 6:                 19. Move 1:
2 2 2       Q Q Q $ $ $      2 2 2 Q Q Q       $ $ $      2 2 2 Q Q Q 6 6 6 $ $ $      2 2 2 Q Q Q 6 6 6 $ $ $
2 2 2       Q Q Q 4 4 4      2 2 2 Q Q Q       4 4 4      2 2 2 Q Q Q 6 6 6 4 4 4      2 2 2 Q Q Q 6 6 6 4 4 4
2 2 2       Q Q Q 4 4 4      2 2 2 Q Q Q       4 4 4      2 2 2 Q Q Q 6 6 6 4 4 4      2 2 2 Q Q Q 6 6 6 4 4 4
5 5 5 3 3 3 6 6 6 A A A      5 5 5 3 3 3 6 6 6 A A A      5 5 5 3 3 3       A A A      5 5 5 3 3 3       A A A
5 5 5 3 3 3 6 6 6 A A A      5 5 5 3 3 3 6 6 6 A A A      5 5 5 3 3 3       A A A      5 5 5 3 3 3       A A A
5 5 5       6 6 6 A A A      5 5 5       6 6 6 A A A      5 5 5             A A A      5 5 5 1 1 1       A A A
B B B       1 1 1 X X X      B B B       1 1 1 X X X      B B B       1 1 1 X X X      B B B 1 1 1       X X X
B B B X X X 1 1 1 X X X      B B B X X X 1 1 1 X X X      B B B X X X 1 1 1 X X X      B B B X X X       X X X
B B B X X X X X X X X X      B B B X X X X X X X X X      B B B X X X X X X X X X      B B B X X X X X X X X X

20. Move A:                  21. Move 4:                 22. Move 6:                 23. Move Q:
2 2 2 Q Q Q 6 6 6 $ $ $      2 2 2 Q Q Q 6 6 6 $ $ $      2 2 2 Q Q Q       $ $ $      2 2 2         Q Q Q $ $ $
2 2 2 Q Q Q 6 6 6 4 4 4      2 2 2 Q Q Q 6 6 6           2 2 2 Q Q Q       6 6 6      2 2 2         Q Q Q 6 6 6
2 2 2 Q Q Q 6 6 6 4 4 4      2 2 2 Q Q Q 6 6 6           2 2 2 Q Q Q       6 6 6      2 2 2         Q Q Q 6 6 6
5 5 5 3 3 3                 5 5 5 3 3 3                  5 5 5 3 3 3       6 6 6      5 5 5 3 3 3       6 6 6
5 5 5 3 3 3 A A A            5 5 5 3 3 3 A A A 4 4 4      5 5 5 3 3 3 A A A 4 4 4      5 5 5 3 3 3 A A A 4 4 4
5 5 5 1 1 1 A A A            5 5 5 1 1 1 A A A 4 4 4      5 5 5 1 1 1 A A A 4 4 4      5 5 5 1 1 1 A A A 4 4 4
B B B 1 1 1 A A A X X X      B B B 1 1 1 A A A X X X      B B B 1 1 1 A A A X X X      B B B 1 1 1 A A A X X X
B B B X X X       X X X      B B B X X X       X X X      B B B X X X       X X X      B B B X X X       X X X
B B B X X X X X X X X X      B B B X X X X X X X X X      B B B X X X X X X X X X      B B B X X X X X X X X X

24. Move 3:                  25. Move 1:                 26. Move A:                 27. Move Q:
2 2 2 3 3 3 Q Q Q $ $ $      2 2 2 3 3 3 Q Q Q $ $ $      2 2 2 3 3 3 Q Q Q $ $ $      2 2 2 3 3 3       $ $ $
2 2 2 3 3 3 Q Q Q 6 6 6      2 2 2 3 3 3 Q Q Q 6 6 6      2 2 2 3 3 3 Q Q Q 6 6 6      2 2 2 3 3 3       6 6 6
2 2 2       Q Q Q 6 6 6      2 2 2 1 1 1 Q Q Q 6 6 6      2 2 2 1 1 1 Q Q Q 6 6 6      2 2 2 1 1 1       6 6 6
5 5 5             6 6 6      5 5 5 1 1 1       6 6 6      5 5 5 1 1 1       6 6 6      5 5 5 1 1 1       6 6 6
5 5 5       A A A 4 4 4      5 5 5       A A A 4 4 4      5 5 5 A A A       4 4 4      5 5 5 A A A Q Q Q 4 4 4
5 5 5 1 1 1 A A A 4 4 4      5 5 5       A A A 4 4 4      5 5 5 A A A       4 4 4      5 5 5 A A A Q Q Q 4 4 4
B B B 1 1 1 A A A X X X      B B B       A A A X X X      B B B A A A       X X X      B B B A A A Q Q Q X X X
B B B X X X       X X X      B B B X X X       X X X      B B B X X X       X X X      B B B X X X       X X X
B B B X X X X X X X X X      B B B X X X X X X X X X      B B B X X X X X X X X X      B B B X X X X X X X X X
```

Shimokita Solution, 1 -> 3 (page 2/2)

```
28. Move 6:
2 2 2 3 3 3 6 6 6 $ $ $
2 2 2 3 3 3 6 6 6
2 2 2 1 1 1 6 6 6
5 5 5 1 1 1
5 5 5 A A A Q Q Q 4 4 4
5 5 5 A A A Q Q Q 4 4 4
B B B A A A Q Q Q X X X
B B B X X X         X X X
B B B X X X X X X X X X
```

```
29. Move 4:
2 2 2 3 3 3 6 6 6 $ $ $
2 2 2 3 3 3 6 6 6 4 4 4
2 2 2 1 1 1 6 6 6 4 4 4
5 5 5 1 1 1
5 5 5 A A A Q Q Q
5 5 5 A A A Q Q Q
B B B A A A Q Q Q X X X
B B B X X X         X X X
B B B X X X X X X X X X
```

```
30. Move Q:
2 2 2 3 3 3 6 6 6 $ $ $
2 2 2 3 3 3 6 6 6 4 4 4
2 2 2 1 1 1 6 6 6 4 4 4
5 5 5 1 1 1         Q Q Q
5 5 5 A A A         Q Q Q
5 5 5 A A A         Q Q Q
B B B A A A         X X X
B B B X X X         X X X
B B B X X X X X X X X X
```

```
31. Move A:
2 2 2 3 3 3 6 6 6 $ $ $
2 2 2 3 3 3 6 6 6 4 4 4
2 2 2 1 1 1 6 6 6 4 4 4
5 5 5 1 1 1         Q Q Q
5 5 5               Q Q Q
5 5 5         A A A Q Q Q
B B B         A A A X X X
B B B X X X A A A X X X
B B B X X X X X X X X X
```

```
32. Move 1:
2 2 2 3 3 3 6 6 6 $ $ $
2 2 2 3 3 3 6 6 6 4 4 4
2 2 2         6 6 6 4 4 4
5 5 5               Q Q Q
5 5 5               Q Q Q
5 5 5 1 1 1 A A A Q Q Q
B B B 1 1 1 A A A X X X
B B B X X X A A A X X X
B B B X X X X X X X X X
```

```
33. Move 6:
2 2 2 3 3 3         $ $ $
2 2 2 3 3 3         4 4 4
2 2 2 6 6 6         4 4 4
5 5 5 6 6 6         Q Q Q
5 5 5 6 6 6         Q Q Q
5 5 5 1 1 1 A A A Q Q Q
B B B 1 1 1 A A A X X X
B B B X X X A A A X X X
B B B X X X X X X X X X
```

```
34. Move A:
2 2 2 3 3 3 A A A $ $ $
2 2 2 3 3 3 A A A 4 4 4
2 2 2 6 6 6 A A A 4 4 4
5 5 5 6 6 6         Q Q Q
5 5 5 6 6 6         Q Q Q
5 5 5 1 1 1         Q Q Q
B B B 1 1 1         X X X
B B B X X X         X X X
B B B X X X X X X X X X
```

```
35. Move 1:
2 2 2 3 3 3 A A A $ $ $
2 2 2 3 3 3 A A A 4 4 4
2 2 2 6 6 6 A A A 4 4 4
5 5 5 6 6 6         Q Q Q
5 5 5 6 6 6         Q Q Q
5 5 5
B B B         1 1 1 X X X
B B B X X X 1 1 1 X X X
B B B X X X X X X X X X
```

```
36. Move 6:
2 2 2 3 3 3 A A A $ $ $
2 2 2 3 3 3 A A A 4 4 4
2 2 2         A A A 4 4 4
5 5 5         6 6 6 Q Q Q
5 5 5         6 6 6 Q Q Q
5 5 5         6 6 6 Q Q Q
B B B         1 1 1 X X X
B B B X X X 1 1 1 X X X
B B B X X X X X X X X X
```

```
37. Move 5:
2 2 2 3 3 3 A A A $ $ $
2 2 2 3 3 3 A A A 4 4 4
2 2 2         A A A 4 4 4
        5 5 5 6 6 6 Q Q Q
        5 5 5 6 6 6 Q Q Q
        5 5 5 6 6 6 Q Q Q
B B B         1 1 1 X X X
B B B X X X 1 1 1 X X X
B B B X X X X X X X X X
```

```
38. Move B:
2 2 2 3 3 3 A A A $ $ $
2 2 2 3 3 3 A A A 4 4 4
2 2 2         A A A 4 4 4
        5 5 5 6 6 6 Q Q Q
B B B 5 5 5 6 6 6 Q Q Q
B B B 5 5 5 6 6 6 Q Q Q
B B B         1 1 1 X X X
        X X X 1 1 1 X X X
        X X X X X X X X X
```

```
39. Move X:
2 2 2 3 3 3 A A A $ $ $
2 2 2 3 3 3 A A A 4 4 4
2 2 2         A A A 4 4 4
        5 5 5 6 6 6 Q Q Q
B B B 5 5 5 6 6 6 Q Q Q
B B B 5 5 5 6 6 6 Q Q Q
B B B 1 1 1 X X X
X X X 1 1 1 X X X
X X X X X X X X X
```

```
40. Move Q:
2 2 2 3 3 3 A A A $ $ $
2 2 2 3 3 3 A A A 4 4 4
2 2 2         A A A 4 4 4
        5 5 5 6 6 6
B B B 5 5 5 6 6 6
B B B 5 5 5 6 6 6
B B B 1 1 1 X X X Q Q Q
X X X 1 1 1 X X X Q Q Q
X X X X X X X X X Q Q Q
```

```
41. Move 6:
2 2 2 3 3 3 A A A $ $ $
2 2 2 3 3 3 A A A 4 4 4
2 2 2         A A A 4 4 4
        5 5 5         6 6 6
B B B 5 5 5         6 6 6
B B B 5 5 5 6 6 6
B B B 1 1 1 X X X Q Q Q
X X X 1 1 1 X X X Q Q Q
X X X X X X X X X Q Q Q
```

```
42. Move 5:
2 2 2 3 3 3 A A A $ $ $
2 2 2 3 3 3 A A A 4 4 4
2 2 2         A A A 4 4 4
                5 5 5 6 6 6
B B B         5 5 5 6 6 6
B B B         5 5 5 6 6 6
B B B 1 1 1 X X X Q Q Q
X X X 1 1 1 X X X Q Q Q
X X X X X X X X X Q Q Q
```

```
43. Move 1:
2 2 2 3 3 3 A A A $ $ $
2 2 2 3 3 3 A A A 4 4 4
2 2 2 1 1 1 A A A 4 4 4
            1 1 1 5 5 5 6 6 6
B B B               5 5 5 6 6 6
B B B               5 5 5 6 6 6
B B B               X X X Q Q Q
X X X               X X X Q Q Q
X X X X X X X X X Q Q Q
```

```
44. Move B:
2 2 2 3 3 3 A A A $ $ $
2 2 2 3 3 3 A A A 4 4 4
2 2 2 1 1 1 A A A 4 4 4
            1 1 1 5 5 5 6 6 6
            5 5 5 6 6 6
        B B B 5 5 5 6 6 6
        B B B X X X Q Q Q
X X X B B B X X X Q Q Q
X X X X X X X X X Q Q Q
```

```
45. Move 1:
2 2 2 3 3 3 A A A $ $ $
2 2 2 3 3 3 A A A 4 4 4
2 2 2               A A A 4 4 4
                    5 5 5 6 6 6
                    5 5 5 6 6 6
1 1 1 B B B 5 5 5 6 6 6
1 1 1 B B B X X X Q Q Q
X X X B B B X X X Q Q Q
X X X X X X X X X Q Q Q
```

```
46. Move 2:
            3 3 3 A A A $ $ $
            3 3 3 A A A 4 4 4
2 2 2               A A A 4 4 4
2 2 2               5 5 5 6 6 6
2 2 2               5 5 5 6 6 6
1 1 1 B B B 5 5 5 6 6 6
1 1 1 B B B X X X Q Q Q
X X X B B B X X X Q Q Q
X X X X X X X X X Q Q Q
```

```
47. Move 3:
3 3 3               A A A $ $ $
3 3 3               A A A 4 4 4
2 2 2               A A A 4 4 4
2 2 2               5 5 5 6 6 6
2 2 2               5 5 5 6 6 6
1 1 1 B B B 5 5 5 6 6 6
1 1 1 B B B X X X Q Q Q
X X X B B B X X X Q Q Q
X X X X X X X X X Q Q Q
```

```
48. Move A:
3 3 3                     $ $ $
3 3 3                     4 4 4
2 2 2 A A A               4 4 4
2 2 2 A A A 5 5 5 6 6 6
2 2 2 A A A 5 5 5 6 6 6
1 1 1 B B B 5 5 5 6 6 6
1 1 1 B B B X X X Q Q Q
X X X B B B X X X Q Q Q
X X X X X X X X X Q Q Q
```

```
49. Move 4:
3 3 3 4 4 4               $ $ $
3 3 3 4 4 4
2 2 2 A A A
2 2 2 A A A 5 5 5 6 6 6
2 2 2 A A A 5 5 5 6 6 6
1 1 1 B B B 5 5 5 6 6 6
1 1 1 B B B X X X Q Q Q
X X X B B B X X X Q Q Q
X X X X X X X X X Q Q Q
```

```
50. Move 5:
3 3 3 4 4 4 5 5 5 $ $ $
3 3 3 4 4 4 5 5 5
2 2 2 A A A 5 5 5
2 2 2 A A A         6 6 6
2 2 2 A A A         6 6 6
1 1 1 B B B         6 6 6
1 1 1 B B B X X X Q Q Q
X X X B B B X X X Q Q Q
X X X X X X X X X Q Q Q
```

```
51. Move 6:
3 3 3 4 4 4 5 5 5 $ $ $
3 3 3 4 4 4 5 5 5
2 2 2 A A A 5 5 5
2 2 2 A A A 6 6 6
2 2 2 A A A 6 6 6
1 1 1 B B B 6 6 6
1 1 1 B B B X X X Q Q Q
X X X B B B X X X Q Q Q
X X X X X X X X X Q Q Q
```

Shimokita Solution, 1 -> 2 (page 1/2)

Here is a solution of 50 rectilinear moves (69 straight-line moves):

```
0:
3 3 3 4 4 4 5 5 5 $ $ $
3 3 3 4 4 4 5 5 5
2 2 2 Q Q Q 5 5 5
2 2 2 Q Q Q 6 6 6
2 2 2 Q Q Q 6 6 6
1 1 1 B B B 6 6 6
1 1 1 B B B X X X A A A
X X X B B B X X X A A A
X X X X X X X X X A A A
```

```
1. Move 6:
3 3 3 4 4 4 5 5 5 $ $ $
3 3 3 4 4 4 5 5 5
2 2 2 Q Q Q 5 5 5
2 2 2 Q Q Q       6 6 6
2 2 2 Q Q Q       6 6 6
1 1 1 B B B       6 6 6
1 1 1 B B B X X X A A A
X X X B B B X X X A A A
X X X X X X X X X A A A
```

```
2. Move 5:
3 3 3 4 4 4           $ $ $
3 3 3 4 4 4
2 2 2 Q Q Q
2 2 2 Q Q Q 5 5 5 6 6 6
2 2 2 Q Q Q 5 5 5 6 6 6
1 1 1 B B B 5 5 5 6 6 6
1 1 1 B B B X X X A A A
X X X B B B X X X A A A
X X X X X X X X X A A A
```

```
3. Move 4:
3 3 3                 $ $ $
3 3 3                 4 4 4
2 2 2 Q Q Q           4 4 4
2 2 2 Q Q Q 5 5 5 6 6 6
2 2 2 Q Q Q 5 5 5 6 6 6
1 1 1 B B B 5 5 5 6 6 6
1 1 1 B B B X X X A A A
X X X B B B X X X A A A
X X X X X X X X X A A A
```

```
4. Move Q:
3 3 3           Q Q Q $ $ $
3 3 3           Q Q Q 4 4 4
2 2 2           Q Q Q 4 4 4
2 2 2           5 5 5 6 6 6
2 2 2           5 5 5 6 6 6
1 1 1 B B B 5 5 5 6 6 6
1 1 1 B B B X X X A A A
X X X B B B X X X A A A
X X X X X X X X X A A A
```

```
5. Move 2:
3 3 3           Q Q Q $ $ $
3 3 3 2 2 2 Q Q Q 4 4 4
            2 2 2 Q Q Q 4 4 4
            2 2 2 5 5 5 6 6 6
                  5 5 5 6 6 6
1 1 1 B B B 5 5 5 6 6 6
1 1 1 B B B X X X A A A
X X X B B B X X X A A A
X X X X X X X X X A A A
```

```
6. Move 1:
3 3 3           Q Q Q $ $ $
3 3 3 2 2 2 Q Q Q 4 4 4
1 1 1 2 2 2 Q Q Q 4 4 4
1 1 1 2 2 2 5 5 5 6 6 6
                  5 5 5 6 6 6
      B B B 5 5 5 6 6 6
      B B B X X X A A A
X X X B B B X X X A A A
X X X X X X X X X A A A
```

```
7. Move B:
3 3 3           Q Q Q $ $ $
3 3 3 2 2 2 Q Q Q 4 4 4
1 1 1 2 2 2 Q Q Q 4 4 4
1 1 1 2 2 2 5 5 5 6 6 6
B B B           5 5 5 6 6 6
B B B           5 5 5 6 6 6
B B B           X X X A A A
X X X           X X X A A A
X X X X X X X X X A A A
```

```
8. Move 2:
3 3 3           Q Q Q $ $ $
3 3 3           Q Q Q 4 4 4
1 1 1           Q Q Q 4 4 4
1 1 1 2 2 2 5 5 5 6 6 6
B B B 2 2 2 5 5 5 6 6 6
B B B 2 2 2 5 5 5 6 6 6
B B B           X X X A A A
X X X           X X X A A A
X X X X X X X X X A A A
```

```
9. Move Q:
3 3 3 Q Q Q           $ $ $
3 3 3 Q Q Q           4 4 4
1 1 1 Q Q Q           4 4 4
1 1 1 2 2 2 5 5 5 6 6 6
B B B 2 2 2 5 5 5 6 6 6
B B B 2 2 2 5 5 5 6 6 6
B B B           X X X A A A
X X X           X X X A A A
X X X X X X X X X A A A
```

```
10. Move 5:
3 3 3 Q Q Q 5 5 5 $ $ $
3 3 3 Q Q Q 5 5 5 4 4 4
1 1 1 Q Q Q 5 5 5 4 4 4
1 1 1 2 2 2       6 6 6
B B B 2 2 2       6 6 6
B B B 2 2 2       6 6 6
B B B           X X X A A A
X X X           X X X A A A
X X X X X X X X X A A A
```

```
11. Move 2:
3 3 3 Q Q Q 5 5 5 $ $ $
3 3 3 Q Q Q 5 5 5 4 4 4
1 1 1 Q Q Q 5 5 5 4 4 4
1 1 1           2 2 2 6 6 6
B B B           2 2 2 6 6 6
B B B           2 2 2 6 6 6
B B B           X X X A A A
X X X           X X X A A A
X X X X X X X X X A A A
```

```
12. Move Q:
3 3 3           5 5 5 $ $ $
3 3 3           5 5 5 4 4 4
1 1 1           5 5 5 4 4 4
1 1 1           2 2 2 6 6 6
B B B Q Q Q 2 2 2 6 6 6
B B B Q Q Q 2 2 2 6 6 6
B B B Q Q Q X X X A A A
X X X           X X X A A A
X X X X X X X X X A A A
```

```
13. Move 1:
3 3 3 1 1 1 5 5 5 $ $ $
3 3 3 1 1 1 5 5 5 4 4 4
                  5 5 5 4 4 4
                  2 2 2 6 6 6
B B B Q Q Q 2 2 2 6 6 6
B B B Q Q Q 2 2 2 6 6 6
B B B Q Q Q X X X A A A
X X X           X X X A A A
X X X X X X X X X A A A
```

```
14. Move 3:
      1 1 1 5 5 5 $ $ $
      1 1 1 5 5 5 4 4 4
      3 3 3 5 5 5 4 4 4
      3 3 3 2 2 2 6 6 6
B B B Q Q Q 2 2 2 6 6 6
B B B Q Q Q 2 2 2 6 6 6
B B B Q Q Q X X X A A A
X X X           X X X A A A
X X X X X X X X X A A A
```

```
15. Move B:
      1 1 1 5 5 5 $ $ $
B B B 1 1 1 5 5 5 4 4 4
B B B 3 3 3 5 5 5 4 4 4
B B B 3 3 3 2 2 2 6 6 6
            Q Q Q 2 2 2 6 6 6
            Q Q Q 2 2 2 6 6 6
            Q Q Q X X X A A A
X X X           X X X A A A
X X X X X X X X X A A A
```

```
16. Move Q:
      1 1 1 5 5 5 $ $ $
B B B 1 1 1 5 5 5 4 4 4
B B B 3 3 3 5 5 5 4 4 4
B B B 3 3 3 2 2 2 6 6 6
Q Q Q           2 2 2 6 6 6
Q Q Q           2 2 2 6 6 6
Q Q Q           X X X A A A
X X X           X X X A A A
X X X X X X X X X A A A
```

```
17. Move 3:
      1 1 1 5 5 5 $ $ $
B B B 1 1 1 5 5 5 4 4 4
B B B           5 5 5 4 4 4
B B B           2 2 2 6 6 6
Q Q Q           2 2 2 6 6 6
Q Q Q 3 3 3 2 2 2 6 6 6
Q Q Q 3 3 3 X X X A A A
X X X           X X X A A A
X X X X X X X X X A A A
```

```
18. Move 1:
            5 5 5 $ $ $
B B B           5 5 5 4 4 4
B B B           5 5 5 4 4 4
B B B 1 1 1 2 2 2 6 6 6
Q Q Q 1 1 1 2 2 2 6 6 6
Q Q Q 3 3 3 2 2 2 6 6 6
Q Q Q 3 3 3 X X X A A A
X X X           X X X A A A
X X X X X X X X X A A A
```

```
19. Move 5:
            5 5 5       $ $ $
B B B 5 5 5           4 4 4
B B B 5 5 5           4 4 4
B B B 1 1 1 2 2 2 6 6 6
Q Q Q 1 1 1 2 2 2 6 6 6
Q Q Q 3 3 3 2 2 2 6 6 6
Q Q Q 3 3 3 X X X A A A
X X X           X X X A A A
X X X X X X X X X A A A
```

```
20. Move 2:
            5 5 5 2 2 2 $ $ $
B B B 5 5 5 2 2 2 4 4 4
B B B 5 5 5 2 2 2 4 4 4
B B B 1 1 1       6 6 6
Q Q Q 1 1 1       6 6 6
Q Q Q 3 3 3       6 6 6
Q Q Q 3 3 3 X X X A A A
X X X           X X X A A A
X X X X X X X X X A A A
```

```
21. Move 6:
            5 5 5 2 2 2 $ $ $
B B B 5 5 5 2 2 2 4 4 4
B B B 5 5 5 2 2 2 4 4 4
B B B 1 1 1 6 6 6
Q Q Q 1 1 1 6 6 6
Q Q Q 3 3 3 6 6 6
Q Q Q 3 3 3 X X X A A A
X X X           X X X A A A
X X X X X X X X X A A A
```

```
22. Move A:
            5 5 5 2 2 2 $ $ $
B B B 5 5 5 2 2 2 4 4 4
B B B 5 5 5 2 2 2 4 4 4
B B B 1 1 1 6 6 6 A A A
Q Q Q 1 1 1 6 6 6 A A A
Q Q Q 3 3 3 6 6 6 A A A
Q Q Q 3 3 3 X X X
X X X           X X X
X X X X X X X X X
```

```
23. Move X:
            5 5 5 2 2 2 $ $ $
B B B 5 5 5 2 2 2 4 4 4
B B B 5 5 5 2 2 2 4 4 4
B B B 1 1 1 6 6 6 A A A
Q Q Q 1 1 1 6 6 6 A A A
Q Q Q 3 3 3 6 6 6 A A A
Q Q Q 3 3 3           X X X
                      X X X
X X X X X X X X X
```

```
24. Move 6:
            5 5 5 2 2 2 $ $ $
B B B 5 5 5 2 2 2 4 4 4
B B B 5 5 5 2 2 2 4 4 4
B B B 1 1 1       A A A
Q Q Q 1 1 1       A A A
Q Q Q 3 3 3 6 6 6 A A A
Q Q Q 3 3 3 6 6 6 X X X
            X X X 6 6 6 X X X
            X X X X X X X X X
```

```
25. Move 1:
            5 5 5 2 2 2 $ $ $
B B B 5 5 5 2 2 2 4 4 4
B B B 5 5 5 2 2 2 4 4 4
B B B           1 1 1 A A A
Q Q Q           1 1 1 A A A
Q Q Q 3 3 3 6 6 6 A A A
Q Q Q 3 3 3 6 6 6 X X X
            X X X 6 6 6 X X X
            X X X X X X X X X
```

```
26. Move Q:
            5 5 5 2 2 2 $ $ $
B B B 5 5 5 2 2 2 4 4 4
B B B 5 5 5 2 2 2 4 4 4
B B B           1 1 1 A A A
                  1 1 1 A A A
      3 3 3 6 6 6 A A A
Q Q Q 3 3 3 6 6 6 X X X
Q Q Q X X X 6 6 6 X X X
Q Q Q X X X X X X X X X
```

```
27. Move B:
            5 5 5 2 2 2 $ $ $
            5 5 5 2 2 2 4 4 4
            5 5 5 2 2 2 4 4 4
B B B           1 1 1 A A A
B B B           1 1 1 A A A
B B B 3 3 3 6 6 6 A A A
Q Q Q 3 3 3 6 6 6 X X X
Q Q Q X X X 6 6 6 X X X
Q Q Q X X X X X X X X X
```

Shimokita Solution, 1 -> 2 (page 2/2)

```
28. Move 5:                        29. Move 2:
5 5 5         2 2 2 $ $ $          5 5 5                 $ $ $
5 5 5         2 2 2 4 4 4          5 5 5                 4 4 4
5 5 5         2 2 2 4 4 4          5 5 5 2 2 2           4 4 4
B B B         1 1 1 A A A          B B B 2 2 2 1 1 1 A A A
B B B         1 1 1 A A A          B B B 2 2 2 1 1 1 A A A
B B B 3 3 3 6 6 6 A A A            B B B 3 3 3 6 6 6 A A A
Q Q Q 3 3 3 6 6 6 X X X            Q Q Q 3 3 3 6 6 6 X X X
Q Q Q X X X 6 6 6 X X X            Q Q Q X X X 6 6 6 X X X
Q Q Q X X X X X X X X X            Q Q Q X X X X X X X X X

30. Move 4:                        31. Move 1:
5 5 5 4 4 4           $ $ $        5 5 5 4 4 4           $ $ $
5 5 5 4 4 4                        5 5 5 4 4 4           1 1 1
5 5 5 2 2 2                        5 5 5 2 2 2           1 1 1
B B B 2 2 2 1 1 1 A A A            B B B 2 2 2           A A A
B B B 2 2 2 1 1 1 A A A            B B B 2 2 2           A A A
B B B 3 3 3 6 6 6 A A A            B B B 3 3 3 6 6 6 A A A
Q Q Q 3 3 3 6 6 6 X X X            Q Q Q 3 3 3 6 6 6 X X X
Q Q Q X X X 6 6 6 X X X            Q Q Q X X X 6 6 6 X X X
Q Q Q X X X X X X X X X            Q Q Q X X X X X X X X X

32. Move 6:                        33. Move 3:
5 5 5 4 4 4 6 6 6 $ $ $            5 5 5 4 4 4 6 6 6 $ $ $
5 5 5 4 4 4 6 6 6 1 1 1            5 5 5 4 4 4 6 6 6 1 1 1
5 5 5 2 2 2 6 6 6 1 1 1            5 5 5 2 2 2 6 6 6 1 1 1
B B B 2 2 2           A A A        B B B 2 2 2           A A A
B B B 2 2 2           A A A        B B B 2 2 2           A A A
B B B 3 3 3           A A A        B B B                 A A A
Q Q Q 3 3 3           X X X        Q Q Q         3 3 3 X X X
Q Q Q X X X           X X X        Q Q Q X X X 3 3 3 X X X
Q Q Q X X X X X X X X X            Q Q Q X X X X X X X X X

34. Move 2:                        35. Move B:
5 5 5 4 4 4 6 6 6 $ $ $            5 5 5 4 4 4 6 6 6 $ $ $
5 5 5 4 4 4 6 6 6 1 1 1            5 5 5 4 4 4 6 6 6 1 1 1
5 5 5         6 6 6 1 1 1          5 5 5         6 6 6 1 1 1
B B B         2 2 2 A A A                B B B 2 2 2 A A A
B B B         2 2 2 A A A                B B B 2 2 2 A A A
B B B         2 2 2 A A A                B B B 2 2 2 A A A
Q Q Q         3 3 3 X X X          Q Q Q         3 3 3 X X X
Q Q Q X X X 3 3 3 X X X            Q Q Q X X X 3 3 3 X X X
Q Q Q X X X X X X X X X            Q Q Q X X X X X X X X X

36. Move Q:                        37. Move X:
5 5 5 4 4 4 6 6 6 $ $ $            5 5 5 4 4 4 6 6 6 $ $ $
5 5 5 4 4 4 6 6 6 1 1 1            5 5 5 4 4 4 6 6 6 1 1 1
5 5 5         6 6 6 1 1 1          5 5 5         6 6 6 1 1 1
Q Q Q B B B 2 2 2 A A A            Q Q Q B B B 2 2 2 A A A
Q Q Q B B B 2 2 2 A A A            Q Q Q B B B 2 2 2 A A A
Q Q Q B B B 2 2 2 A A A            Q Q Q B B B 2 2 2 A A A
              3 3 3 X X X                        3 3 3 X X X
        X X X 3 3 3 X X X          X X X 3 3 3 X X X
        X X X X X X X X X          X X X X X X X X X

38. Move A:                        39. Move 2:
5 5 5 4 4 4 6 6 6 $ $ $            5 5 5 4 4 4 6 6 6 $ $ $
5 5 5 4 4 4 6 6 6 1 1 1            5 5 5 4 4 4 6 6 6 1 1 1
5 5 5         6 6 6 1 1 1          5 5 5         6 6 6 1 1 1
Q Q Q B B B 2 2 2                  Q Q Q B B B         2 2 2
Q Q Q B B B 2 2 2                  Q Q Q B B B         2 2 2
Q Q Q B B B 2 2 2                  Q Q Q B B B         2 2 2
              3 3 3 X X X A A A                  3 3 3 X X X A A A
X X X 3 3 3 X X X A A A            X X X 3 3 3 X X X A A A
X X X X X X X X X A A A            X X X X X X X X X A A A

40. Move B:                        41. Move 4:
5 5 5 4 4 4 6 6 6 $ $ $            5 5 5         6 6 6 $ $ $
5 5 5 4 4 4 6 6 6 1 1 1            5 5 5         6 6 6 1 1 1
5 5 5         6 6 6 1 1 1          5 5 5         6 6 6 1 1 1
Q Q Q         B B B 2 2 2          Q Q Q 4 4 4 B B B 2 2 2
Q Q Q         B B B 2 2 2          Q Q Q 4 4 4 B B B 2 2 2
Q Q Q         B B B 2 2 2          Q Q Q         B B B 2 2 2
              3 3 3 X X X A A A                  3 3 3 X X X A A A
X X X 3 3 3 X X X A A A            X X X 3 3 3 X X X A A A
X X X X X X X X X A A A            X X X X X X X X X A A A

42. Move 5:                        43. Move Q:
        5 5 5 6 6 6 $ $ $          Q Q Q 5 5 5 6 6 6 $ $ $
        5 5 5 6 6 6 1 1 1          Q Q Q 5 5 5 6 6 6 1 1 1
        5 5 5 6 6 6 1 1 1          Q Q Q 5 5 5 6 6 6 1 1 1
Q Q Q 4 4 4 B B B 2 2 2                  4 4 4 B B B 2 2 2
Q Q Q 4 4 4 B B B 2 2 2                  4 4 4 B B B 2 2 2
Q Q Q         B B B 2 2 2                        B B B 2 2 2
              3 3 3 X X X A A A                  3 3 3 X X X A A A
X X X 3 3 3 X X X A A A            X X X 3 3 3 X X X A A A
X X X X X X X X X A A A            X X X X X X X X X A A A

44. Move 3:                        45. Move 4:
Q Q Q 5 5 5 6 6 6 $ $ $            Q Q Q 5 5 5 6 6 6 $ $ $
Q Q Q 5 5 5 6 6 6 1 1 1            Q Q Q 5 5 5 6 6 6 1 1 1
Q Q Q 5 5 5 6 6 6 1 1 1            Q Q Q 5 5 5 6 6 6 1 1 1
3 3 3 4 4 4 B B B 2 2 2            3 3 3         B B B 2 2 2
3 3 3 4 4 4 B B B 2 2 2            3 3 3         B B B 2 2 2
              B B B 2 2 2          4 4 4         B B B 2 2 2
              X X X A A A          4 4 4         X X X A A A
X X X         X X X A A A          X X X         X X X A A A
X X X X X X X X X A A A            X X X X X X X X X A A A

46. Move 5:                        47. Move 6:
Q Q Q         6 6 6 $ $ $          Q Q Q                 $ $ $
Q Q Q         6 6 6 1 1 1          Q Q Q                 1 1 1
Q Q Q         6 6 6 1 1 1          Q Q Q 6 6 6           1 1 1
3 3 3         B B B 2 2 2          3 3 3 6 6 6 B B B 2 2 2
3 3 3         B B B 2 2 2          3 3 3 6 6 6 B B B 2 2 2
4 4 4 5 5 5 B B B 2 2 2            4 4 4 5 5 5 B B B 2 2 2
4 4 4 5 5 5 X X X A A A            4 4 4 5 5 5 X X X A A A
X X X 5 5 5 X X X A A A            X X X 5 5 5 X X X A A A
X X X X X X X X X A A A            X X X X X X X X X A A A

48. Move 1:                        49. Move B:
Q Q Q 1 1 1           $ $ $        Q Q Q 1 1 1 B B B $ $ $
Q Q Q 1 1 1                        Q Q Q 1 1 1 B B B
Q Q Q 6 6 6                        Q Q Q 6 6 6 B B B
3 3 3 6 6 6 B B B 2 2 2            3 3 3 6 6 6         2 2 2
3 3 3 6 6 6 B B B 2 2 2            3 3 3 6 6 6         2 2 2
4 4 4 5 5 5 B B B 2 2 2            4 4 4 5 5 5         2 2 2
4 4 4 5 5 5 X X X A A A            4 4 4 5 5 5 X X X A A A
X X X 5 5 5 X X X A A A            X X X 5 5 5 X X X A A A
X X X X X X X X X A A A            X X X X X X X X X A A A

50. Move 2:
Q Q Q 1 1 1 B B B $ $ $
Q Q Q 1 1 1 B B B
Q Q Q 6 6 6 B B B
3 3 3 6 6 6 2 2 2
3 3 3 6 6 6 2 2 2
4 4 4 5 5 5 2 2 2
4 4 4 5 5 5 X X X A A A
X X X 5 5 5 X X X A A A
X X X X X X X X X A A A
```

Shimokita Solution, 2 -> 3 (page 1/2)

Here is a solution of 58 rectilinear moves (81 straight-line moves):

```
0:                          1. Move 2:                   2. Move B:                   3. Move 1:
Q Q Q 1 1 1 B B B $ $ $     Q Q Q 1 1 1 B B B $ $ $     Q Q Q 1 1 1         $ $ $     Q Q Q                 $ $ $
Q Q Q 1 1 1 B B B           Q Q Q 1 1 1 B B B           Q Q Q 1 1 1                   Q Q Q                 1 1 1
Q Q Q 6 6 6 B B B           Q Q Q 6 6 6 B B B           Q Q Q 6 6 6                   Q Q Q 6 6 6           1 1 1
3 3 3 6 6 6 2 2 2           3 3 3 6 6 6         2 2 2   3 3 3 6 6 6 B B B 2 2 2       3 3 3 6 6 6 B B B 2 2 2
3 3 3 6 6 6 2 2 2           3 3 3 6 6 6         2 2 2   3 3 3 6 6 6 B B B 2 2 2       3 3 3 6 6 6 B B B 2 2 2
4 4 4 5 5 5 2 2 2           4 4 4 5 5 5         2 2 2   4 4 4 5 5 5 B B B 2 2 2       4 4 4 5 5 5 B B B 2 2 2
4 4 4 5 5 5 X X X A A A     4 4 4 5 5 5 X X X A A A     4 4 4 5 5 5 X X X A A A       4 4 4 5 5 5 X X X A A A
X X X 5 5 5 X X X A A A     X X X 5 5 5 X X X A A A     X X X 5 5 5 X X X A A A       X X X 5 5 5 X X X A A A
X X X X X X X X X A A A     X X X X X X X X X A A A     X X X X X X X X X A A A       X X X X X X X X X A A A

4. Move 6:                  5. Move 5:                  6. Move 3:                   7. Move 5:
Q Q Q         6 6 6 $ $ $   Q Q Q 5 5 5 6 6 6 $ $ $     Q Q Q 5 5 5 6 6 6 $ $ $       Q Q Q         6 6 6 $ $ $
Q Q Q         6 6 6 1 1 1   Q Q Q 5 5 5 6 6 6 1 1 1     Q Q Q 5 5 5 6 6 6 1 1 1       Q Q Q         6 6 6 1 1 1
Q Q Q         6 6 6 1 1 1   Q Q Q 5 5 5 6 6 6 1 1 1     Q Q Q 5 5 5 6 6 6 1 1 1       Q Q Q         6 6 6 1 1 1
3 3 3         B B B 2 2 2   3 3 3         B B B 2 2 2   Q Q Q 5 5 5 6 6 6 1 1 1       5 5 5 B B B 2 2 2
3 3 3         B B B 2 2 2   3 3 3         B B B 2 2 2                 B B B 2 2 2       5 5 5 B B B 2 2 2
4 4 4 5 5 5 B B B 2 2 2     4 4 4         B B B 2 2 2                 B B B 2 2 2       4 4 4 5 5 5 B B B 2 2 2
4 4 4 5 5 5 X X X A A A     4 4 4         X X X A A A   4 4 4 3 3 3 X X X A A A       4 4 4 3 3 3 X X X A A A
X X X 5 5 5 X X X A A A     X X X         X X X A A A   X X X 3 3 3 X X X A A A       X X X 3 3 3 X X X A A A
X X X X X X X X X A A A     X X X X X X X X X A A A     X X X X X X X X X A A A       X X X X X X X X X A A A

8. Move Q:                  9. Move 4:                  10. Move 5:                  11. Move B:
Q Q Q 6 6 6 $ $ $           4 4 4 Q Q Q 6 6 6 $ $ $     4 4 4 Q Q Q 6 6 6 $ $ $       4 4 4 Q Q Q 6 6 6 $ $ $
Q Q Q 6 6 6 1 1 1           4 4 4 Q Q Q 6 6 6 1 1 1     4 4 4 Q Q Q 6 6 6 1 1 1       4 4 4 Q Q Q 6 6 6 1 1 1
Q Q Q 6 6 6 1 1 1                 Q Q Q 6 6 6 1 1 1     5 5 5 Q Q Q 6 6 6 1 1 1       5 5 5 Q Q Q 6 6 6 1 1 1
5 5 5 B B B 2 2 2                 5 5 5 B B B 2 2 2     5 5 5         B B B 2 2 2       5 5 5 B B B         2 2 2
5 5 5 B B B 2 2 2                 5 5 5 B B B 2 2 2     5 5 5         B B B 2 2 2       5 5 5 B B B         2 2 2
4 4 4 5 5 5 B B B 2 2 2           5 5 5 B B B 2 2 2                   B B B 2 2 2       B B B         2 2 2
4 4 4 3 3 3 X X X A A A           3 3 3 X X X A A A     3 3 3 X X X A A A               3 3 3 X X X A A A
X X X 3 3 3 X X X A A A     X X X 3 3 3 X X X A A A     X X X 3 3 3 X X X A A A       X X X 3 3 3 X X X A A A
X X X X X X X X X A A A     X X X X X X X X X A A A     X X X X X X X X X A A A       X X X X X X X X X A A A

12. Move 6:                 13. Move Q:                 14. Move 4:                  15. Move 5:
4 4 4 Q Q Q         $ $ $   4 4 4         Q Q Q $ $ $   4 4 4 Q Q Q $ $ $             5 5 5 4 4 4 Q Q Q $ $ $
4 4 4 Q Q Q         1 1 1   4 4 4         Q Q Q 1 1 1   4 4 4 Q Q Q 1 1 1             5 5 5 4 4 4 Q Q Q 1 1 1
5 5 5 Q Q Q         1 1 1   5 5 5         Q Q Q 1 1 1   5 5 5         Q Q Q 1 1 1     5 5 5         Q Q Q 1 1 1
5 5 5 B B B 6 6 6 2 2 2     5 5 5 B B B 6 6 6 2 2 2     5 5 5 B B B 6 6 6 2 2 2               B B B 6 6 6 2 2 2
5 5 5 B B B 6 6 6 2 2 2     5 5 5 B B B 6 6 6 2 2 2     5 5 5 B B B 6 6 6 2 2 2               B B B 6 6 6 2 2 2
B B B 6 6 6 2 2 2           B B B 6 6 6 2 2 2           B B B 6 6 6 2 2 2                     B B B 6 6 6 2 2 2
3 3 3 X X X A A A           3 3 3 X X X A A A           3 3 3 X X X A A A                     3 3 3 X X X A A A
X X X 3 3 3 X X X A A A     X X X 3 3 3 X X X A A A     X X X 3 3 3 X X X A A A       X X X 3 3 3 X X X A A A
X X X X X X X X X A A A     X X X X X X X X X A A A     X X X X X X X X X A A A       X X X X X X X X X A A A

16. Move B:                 17. Move 6:                 18. Move 2:                  19. Move A:
5 5 5 4 4 4 Q Q Q $ $ $     5 5 5 4 4 4 Q Q Q $ $ $     5 5 5 4 4 4 Q Q Q $ $ $       5 5 5 4 4 4 Q Q Q $ $ $
5 5 5 4 4 4 Q Q Q 1 1 1     5 5 5 4 4 4 Q Q Q 1 1 1     5 5 5 4 4 4 Q Q Q 1 1 1       5 5 5 4 4 4 Q Q Q 1 1 1
5 5 5         Q Q Q 1 1 1   5 5 5         Q Q Q 1 1 1   5 5 5         Q Q Q 1 1 1     5 5 5         Q Q Q 1 1 1
            6 6 6 2 2 2               6 6 6   2 2 2               6 6 6 2 2 2                     6 6 6 2 2 2 A A A
B B B       6 6 6 2 2 2     B B B 6 6 6       2 2 2     B B B 6 6 6 2 2 2             B B B 6 6 6 2 2 2 A A A
B B B       6 6 6 2 2 2     B B B 6 6 6       2 2 2     B B B 6 6 6 2 2 2             B B B 6 6 6 2 2 2 A A A
B B B 3 3 3 X X X A A A     B B B 3 3 3 X X X A A A     B B B 3 3 3 X X X A A A       B B B 3 3 3 X X X
X X X 3 3 3 X X X A A A     X X X 3 3 3 X X X A A A     X X X 3 3 3 X X X A A A       X X X 3 3 3 X X X
X X X X X X X X X A A A     X X X X X X X X X A A A     X X X X X X X X X A A A       X X X X X X X X X

20. Move X:                 21. Move B:                 22. Move 6:                  23. Move 2:
5 5 5 4 4 4 Q Q Q $ $ $     5 5 5 4 4 4 Q Q Q $ $ $     5 5 5 4 4 4 Q Q Q $ $ $       5 5 5 4 4 4 Q Q Q $ $ $
5 5 5 4 4 4 Q Q Q 1 1 1     5 5 5 4 4 4 Q Q Q 1 1 1     5 5 5 4 4 4 Q Q Q 1 1 1       5 5 5 4 4 4 Q Q Q 1 1 1
5 5 5         Q Q Q 1 1 1   5 5 5         Q Q Q 1 1 1   5 5 5         Q Q Q 1 1 1     5 5 5 2 2 2 Q Q Q 1 1 1
            6 6 6 2 2 2 A A A           6 6 6 2 2 2 A A A   6 6 6       2 2 2 A A A     6 6 6 2 2 2         A A A
B B B 6 6 6 2 2 2 A A A                 6 6 6 2 2 2 A A A   6 6 6       2 2 2 A A A     6 6 6 2 2 2         A A A
B B B 6 6 6 2 2 2 A A A                 6 6 6 2 2 2 A A A   6 6 6       2 2 2 A A A     6 6 6               A A A
B B B       3 3 3 X X X     B B B       3 3 3 X X X     B B B       3 3 3 X X X       B B B       3 3 3 X X X
            X X X 3 3 3 X X X   B B B X X X 3 3 3 X X X   B B B X X X 3 3 3 X X X       B B B X X X 3 3 3 X X X
            X X X X X X X X X   B B B X X X X X X X X X   B B B X X X X X X X X X       B B B X X X X X X X X X

24. Move 3:                 25. Move A:                 26. Move 1:                  27. Move Q:
5 5 5 4 4 4 Q Q Q $ $ $     5 5 5 4 4 4 Q Q Q $ $ $     5 5 5 4 4 4 Q Q Q $ $ $       5 5 5 4 4 4         $ $ $
5 5 5 4 4 4 Q Q Q 1 1 1     5 5 5 4 4 4 Q Q Q 1 1 1     5 5 5 4 4 4 Q Q Q             5 5 5 4 4 4         Q Q Q
5 5 5 2 2 2 Q Q Q 1 1 1     5 5 5 2 2 2 Q Q Q 1 1 1     5 5 5 2 2 2 Q Q Q             5 5 5 2 2 2         Q Q Q
6 6 6 2 2 2         A A A   6 6 6 2 2 2                 6 6 6 2 2 2                     6 6 6 2 2 2         Q Q Q
6 6 6 2 2 2         A A A   6 6 6 2 2 2                 6 6 6 2 2 2         1 1 1       6 6 6 2 2 2         1 1 1
6 6 6 3 3 3         A A A   6 6 6 3 3 3 A A A           6 6 6 3 3 3 A A A 1 1 1         6 6 6 3 3 3 A A A 1 1 1
B B B 3 3 3         X X X   B B B 3 3 3 A A A A X X X   B B B 3 3 3 A A A X X X         B B B 3 3 3 A A A X X X
B B B X X X         X X X   B B B X X X A A A X X X     B B B X X X A A A X X X         B B B X X X A A A X X X
B B B X X X X X X X X X     B B B X X X X X X X X X     B B B X X X A A A X X X         B B B X X X A A A X X X
```

Shimokita Solution, 2 -> 3 (page 2/2)

```
#28. Move 4:
5 5 5             4 4 4 $ $ $
5 5 5             4 4 4 Q Q Q
5 5 5 2 2 2             Q Q Q
6 6 6 2 2 2             Q Q Q
6 6 6 2 2 2             1 1 1
6 6 6 3 3 3 A A A 1 1 1
B B B 3 3 3 A A A X X X
B B B X X X A A A X X X
B B B X X X X X X X X X
```

```
#29. Move 2:
5 5 5 2 2 2 4 4 4 $ $ $
5 5 5 2 2 2 4 4 4 Q Q Q
5 5 5 2 2 2             Q Q Q
6 6 6                   Q Q Q
6 6 6                   1 1 1
6 6 6 3 3 3 A A A 1 1 1
B B B 3 3 3 A A A X X X
B B B X X X A A A X X X
B B B X X X X X X X X X
```

```
#30. Move 3:
5 5 5 2 2 2 4 4 4 $ $ $
5 5 5 2 2 2 4 4 4 Q Q Q
5 5 5 2 2 3 3 3 Q Q Q
6 6 6       3 3 3 Q Q Q
6 6 6             1 1 1
6 6 6       A A A 1 1 1
B B B       A A A X X X
B B B X X X A A A X X X
B B B X X X X X X X X X
```

```
#31. Move A:
5 5 5 2 2 2 4 4 4 $ $ $
5 5 5 2 2 2 4 4 4 Q Q Q
5 5 5 2 2 3 3 3 Q Q Q
6 6 6 A A A 3 3 Q Q Q
6 6 6 A A A       1 1 1
6 6 6 A A A       1 1 1
B B B             X X X
B B B X X X       X X X
B B B X X X X X X X X X
```

```
#32. Move 1:
5 5 5 2 2 2 4 4 4 $ $ $
5 5 5 2 2 2 4 4 4 Q Q Q
5 5 5 2 2 3 3 3 Q Q Q
6 6 6 A A A 3 3 3 Q Q Q
6 6 6 A A A
6 6 6 A A A
B B B             1 1 1 X X X
B B B X X X 1 1 1 X X X
B B B X X X X X X X X X
```

```
#33. Move 3:
5 5 5 2 2 2 4 4 4 $ $ $
5 5 5 2 2 2 4 4 4 Q Q Q
5 5 5 2 2 2             Q Q Q
6 6 6 A A A 3 3 3 Q Q Q
6 6 6 A A A 3 3 3
6 6 6 A A A
B B B             1 1 1 X X X
B B B X X X 1 1 1 X X X
B B B X X X X X X X X X
```

```
#34. Move Q:
5 5 5 2 2 2 4 4 4 $ $ $
5 5 5 2 2 2 4 4 4
5 5 5 2 2 2
6 6 6 A A A 3 3 3 Q Q Q
6 6 6 A A A 3 3 3 Q Q Q
6 6 6 A A A       Q Q Q
B B B             1 1 1 X X X
B B B X X X 1 1 1 X X X
B B B X X X X X X X X X
```

```
#35. Move 4:
5 5 5 2 2 2             $ $ $
5 5 5 2 2 2             4 4 4
5 5 5 2 2 2             4 4 4
6 6 6 A A A 3 3 3 Q Q Q
6 6 6 A A A 3 3 3 Q Q Q
6 6 6 A A A       Q Q Q
B B B             1 1 1 X X X
B B B X X X 1 1 1 X X X
B B B X X X X X X X X X
```

```
#36. Move 3:
5 5 5 2 2 2 3 3 3 $ $ $
5 5 5 2 2 2 3 3 3 4 4 4
5 5 5 2 2 2             4 4 4
6 6 6 A A A       Q Q Q
6 6 6 A A A       Q Q Q
6 6 6 A A A       Q Q Q
B B B             1 1 1 X X X
B B B X X X 1 1 1 X X X
B B B X X X X X X X X X
```

```
#37. Move A:
5 5 5 2 2 2 3 3 3 $ $ $
5 5 5 2 2 2 3 3 3 4 4 4
5 5 5 2 2 A A A 4 4 4
6 6 6       A A A Q Q Q
6 6 6       A A A Q Q Q
6 6 6             Q Q Q
B B B             1 1 1 X X X
B B B X X X 1 1 1 X X X
B B B X X X X X X X X X
```

```
#38. Move 6:
5 5 5 2 2 2 3 3 3 $ $ $
5 5 5 2 2 2 3 3 3 4 4 4
5 5 5 2 2 A A A 4 4 4
            6 6 6 A A A Q Q Q
            6 6 6 A A A Q Q Q
            6 6 6       Q Q Q
B B B             1 1 1 X X X
B B B X X X 1 1 1 X X X
B B B X X X X X X X X X
```

```
#39. Move 5:
            2 2 2 3 3 3 $ $ $
            2 2 2 3 3 3 4 4 4
            2 2 2 A A A 4 4 4
5 5 5 6 6 6 A A A Q Q Q
5 5 5 6 6 6 A A A Q Q Q
5 5 5 6 6 6       Q Q Q
B B B             1 1 1 X X X
B B B X X X 1 1 1 X X X
B B B X X X X X X X X X
```

```
#40. Move 2:
2 2 2             3 3 3 $ $ $
2 2 2             3 3 3 4 4 4
2 2 2             A A A 4 4 4
5 5 5 6 6 6 A A A Q Q Q
5 5 5 6 6 6 A A A Q Q Q
5 5 5 6 6 6       Q Q Q
B B B             1 1 1 X X X
B B B X X X 1 1 1 X X X
B B B X X X X X X X X X
```

```
#41. Move 3:
2 2 2 3 3 3             $ $ $
2 2 2 3 3 3             4 4 4
2 2 2             A A A 4 4 4
5 5 5 6 6 6 A A A Q Q Q
5 5 5 6 6 6 A A A Q Q Q
5 5 5 6 6 6       Q Q Q
B B B             1 1 1 X X X
B B B X X X 1 1 1 X X X
B B B X X X X X X X X X
```

```
#42. Move A:
2 2 2 3 3 3 A A A $ $ $
2 2 2 3 3 3 A A A 4 4 4
2 2 2             A A A 4 4 4
5 5 5 6 6 6       Q Q Q
5 5 5 6 6 6       Q Q Q
5 5 5 6 6 6       Q Q Q
B B B             1 1 1 X X X
B B B X X X 1 1 1 X X X
B B B X X X X X X X X X
```

```
#43. Move 6:
2 2 2 3 3 3 A A A $ $ $
2 2 2 3 3 3 A A A 4 4 4
2 2 2             A A A 4 4 4
5 5 5       6 6 6 Q Q Q
5 5 5       6 6 6 Q Q Q
5 5 5       6 6 6 Q Q Q
B B B             1 1 1 X X X
B B B X X X 1 1 1 X X X
B B B X X X X X X X X X
```

```
#44. Move 5:
2 2 2 3 3 3 A A A $ $ $
2 2 2 3 3 3 A A A 4 4 4
2 2 2             A A A 4 4 4
            5 5 5 6 6 6 Q Q Q
            5 5 5 6 6 6 Q Q Q
            5 5 5 6 6 6 Q Q Q
B B B             1 1 1 X X X
B B B X X X 1 1 1 X X X
B B B X X X X X X X X X
```

```
#45. Move B:
2 2 2 3 3 3 A A A $ $ $
2 2 2 3 3 3 A A A 4 4 4
2 2 2             A A A 4 4 4
            5 5 5 6 6 6 Q Q Q
B B B 5 5 5 6 6 6 Q Q Q
B B B 5 5 5 6 6 6 Q Q Q
B B B             1 1 1 X X X
            X X X 1 1 1 X X X
            X X X X X X X X X
```

```
#46. Move X:
2 2 2 3 3 3 A A A $ $ $
2 2 2 3 3 3 A A A 4 4 4
2 2 2             A A A 4 4 4
            5 5 5 6 6 6 Q Q Q
B B B 5 5 5 6 6 6 Q Q Q
B B B 5 5 5 6 6 6 Q Q Q
B B B 1 1 1 X X X
X X X 1 1 1 X X X
X X X X X X X X X
```

```
#47. Move Q:
2 2 2 3 3 3 A A A $ $ $
2 2 2 3 3 3 A A A 4 4 4
2 2 2             A A A 4 4 4
            5 5 5 6 6 6
B B B 5 5 5 6 6 6
B B B 5 5 5 6 6 6
B B B 1 1 1 X X X Q Q Q
X X X 1 1 1 X X X Q Q Q
X X X X X X X X X Q Q Q
```

```
#48. Move 6:
2 2 2 3 3 3 A A A $ $ $
2 2 2 3 3 3 A A A 4 4 4
2 2 2             A A A 4 4 4
            5 5 5       6 6 6
B B B 5 5 5       6 6 6
B B B 5 5 5       6 6 6
B B B 1 1 1 X X X Q Q Q
X X X 1 1 1 X X X Q Q Q
X X X X X X X X X Q Q Q
```

```
#49. Move 5:
2 2 2 3 3 3 A A A $ $ $
2 2 2 3 3 3 A A A 4 4 4
2 2 2             A A A 4 4 4
                  5 5 5 6 6 6
B B B             5 5 5 6 6 6
B B B             5 5 5 6 6 6
B B B 1 1 1 X X X Q Q Q
X X X 1 1 1 X X X Q Q Q
X X X X X X X X X Q Q Q
```

```
#50. Move 1:
2 2 2 3 3 3 A A A $ $ $
2 2 2 3 3 3 A A A 4 4 4
2 2 2 1 1 1 A A A 4 4 4
            1 1 1 5 5 5 6 6 6
B B B             5 5 5 6 6 6
B B B             5 5 5 6 6 6
B B B             X X X Q Q Q
X X X             X X X Q Q Q
X X X X X X X X X Q Q Q
```

```
#51. Move B:
2 2 2 3 3 3 A A A $ $ $
2 2 2 3 3 3 A A A 4 4 4
2 2 2 1 1 1 A A A 4 4 4
            1 1 1 5 5 5 6 6 6
                  5 5 5 6 6 6
            B B B 5 5 5 6 6 6
            B B B X X X Q Q Q
X X X B B B X X X Q Q Q
X X X X X X X X X Q Q Q
```

```
#52. Move 1:
2 2 2 3 3 3 A A A $ $ $
2 2 2 3 3 3 A A A 4 4 4
2 2 2             A A A 4 4 4
                  5 5 5 6 6 6
                  5 5 5 6 6 6
1 1 1 B B B 5 5 5 6 6 6
1 1 1 B B B X X X Q Q Q
X X X B B B X X X Q Q Q
X X X X X X X X X Q Q Q
```

```
#53. Move 2:
            3 3 3 A A A $ $ $
            3 3 3 A A A 4 4 4
2 2 2             A A A 4 4 4
2 2 2             5 5 5 6 6 6
2 2 2             5 5 5 6 6 6
1 1 1 B B B 5 5 5 6 6 6
1 1 1 B B B X X X Q Q Q
X X X B B B X X X Q Q Q
X X X X X X X X X Q Q Q
```

```
#54. Move 3:
3 3 3             A A A $ $ $
3 3 3             A A A 4 4 4
2 2 2             A A A 4 4 4
2 2 2             5 5 5 6 6 6
2 2 2             5 5 5 6 6 6
1 1 1 B B B 5 5 5 6 6 6
1 1 1 B B B X X X Q Q Q
X X X B B B X X X Q Q Q
X X X X X X X X X Q Q Q
```

```
#55. Move A:
3 3 3                   $ $ $
3 3 3                   4 4 4
2 2 2 A A A             4 4 4
2 2 2 A A A 5 5 5 6 6 6
2 2 2 A A A 5 5 5 6 6 6
1 1 1 B B B 5 5 5 6 6 6
1 1 1 B B B X X X Q Q Q
X X X B B B X X X Q Q Q
X X X X X X X X X Q Q Q
```

```
#56. Move 4:
3 3 3 4 4 4             $ $ $
3 3 3 4 4 4
2 2 2 A A A
2 2 2 A A A 5 5 5 6 6 6
2 2 2 A A A 5 5 5 6 6 6
1 1 1 B B B 5 5 5 6 6 6
1 1 1 B B B X X X Q Q Q
X X X B B B X X X Q Q Q
X X X X X X X X X Q Q Q
```

```
#57. Move 5:
3 3 3 4 4 4 5 5 5 $ $ $
3 3 3 4 4 4 5 5 5
2 2 2 A A A 5 5 5
2 2 2 A A A       6 6 6
2 2 2 A A A       6 6 6
1 1 1 B B B       6 6 6
1 1 1 B B B X X X Q Q Q
X X X B B B X X X Q Q Q
X X X X X X X X X Q Q Q
```

```
#58. Move 6:
3 3 3 4 4 4 5 5 5 $ $ $
3 3 3 4 4 4 5 5 5
2 2 2 A A A 5 5 5
2 2 2 A A A 6 6 6
2 2 2 A A A 6 6 6
1 1 1 B B B 6 6 6
1 1 1 B B B X X X Q Q Q
X X X B B B X X X Q Q Q
X X X X X X X X X Q Q Q
```