Program Output 3 Sample Solutions

8-Puzzle Problem

Please select an option:

1) Random Puzzle

2) User-Defined Puzzle

3) Exit

2

Enter a new puzzle:

1 2 5 6 0 7 8 3 4

Empty Pos: 4

1 2 5

6 0 7

8 3 4

---------- STARTING TO SOLVE PUZZLE USING H1 --------

1 2 5

6 0 7

8 3 4

------ Current Step Cost: 0 - Search Cost: 0 - fringes Size: 0 - Explored Size: 1 -------

1 0 5

6 2 7

8 3 4

------ Current Step Cost: 1 - Search Cost: 4 - fringes Size: 3 - Explored Size: 2 -------

0 1 5

6 2 7

8 3 4

------ Current Step Cost: 2 - Search Cost: 6 - fringes Size: 4 - Explored Size: 3 -------

1 2 5

6 7 0

8 3 4

------ Current Step Cost: 1 - Search Cost: 7 - fringes Size: 4 - Explored Size: 4 -------

1 2 5

6 3 7

8 0 4

------ Current Step Cost: 1 - Search Cost: 9 - fringes Size: 5 - Explored Size: 5 -------

1 2 0

6 7 5

8 3 4

------ Current Step Cost: 2 - Search Cost: 11 - fringes Size: 6 - Explored Size: 6 -------

1 2 5

0 6 7

8 3 4

------ Current Step Cost: 1 - Search Cost: 12 - fringes Size: 6 - Explored Size: 7 -------

1 0 2

6 7 5

8 3 4

------ Current Step Cost: 3 - Search Cost: 14 - fringes Size: 7 - Explored Size: 8 -------

0 1 2

6 7 5

8 3 4

------ Current Step Cost: 4 - Search Cost: 16 - fringes Size: 8 - Explored Size: 9 -------

0 2 5

1 6 7

8 3 4

------ Current Step Cost: 2 - Search Cost: 17 - fringes Size: 8 - Explored Size: 10 -------

6 1 2

0 7 5

8 3 4

------ Current Step Cost: 5 - Search Cost: 18 - fringes Size: 8 - Explored Size: 11 -------

1 5 0

6 2 7

8 3 4

------ Current Step Cost: 2 - Search Cost: 20 - fringes Size: 9 - Explored Size: 12 -------

1 2 5

6 7 4

8 3 0

------ Current Step Cost: 2 - Search Cost: 21 - fringes Size: 9 - Explored Size: 13 -------

1 7 2

6 0 5

8 3 4

------ Current Step Cost: 4 - Search Cost: 22 - fringes Size: 9 - Explored Size: 14 -------

6 1 5

0 2 7

8 3 4

------ Current Step Cost: 3 - Search Cost: 25 - fringes Size: 11 - Explored Size: 15 -------

1 2 5

8 6 7

0 3 4

------ Current Step Cost: 2 - Search Cost: 27 - fringes Size: 12 - Explored Size: 16 -------

1 2 5

6 3 7

0 8 4

------ Current Step Cost: 2 - Search Cost: 28 - fringes Size: 12 - Explored Size: 17 -------

1 2 5

6 3 7

8 4 0

------ Current Step Cost: 2 - Search Cost: 29 - fringes Size: 12 - Explored Size: 18 -------

1 2 5

0 3 7

6 8 4

------ Current Step Cost: 3 - Search Cost: 30 - fringes Size: 12 - Explored Size: 19 -------

0 2 5

1 3 7

6 8 4

------ Current Step Cost: 4 - Search Cost: 32 - fringes Size: 13 - Explored Size: 20 -------

1 2 5

3 0 7

6 8 4

------ Current Step Cost: 4 - Search Cost: 33 - fringes Size: 13 - Explored Size: 21 -------

1 2 5

6 7 4

8 0 3

------ Current Step Cost: 3 - Search Cost: 36 - fringes Size: 15 - Explored Size: 22 -------

6 1 2

7 0 5

8 3 4

------ Current Step Cost: 6 - Search Cost: 38 - fringes Size: 16 - Explored Size: 23 -------

2 0 5

1 6 7

8 3 4

------ Current Step Cost: 3 - Search Cost: 41 - fringes Size: 18 - Explored Size: 24 -------

1 2 5

3 7 0

6 8 4

------ Current Step Cost: 5 - Search Cost: 43 - fringes Size: 19 - Explored Size: 25 -------

1 2 5

6 0 4

8 7 3

------ Current Step Cost: 4 - Search Cost: 45 - fringes Size: 20 - Explored Size: 26 -------

6 1 2

8 7 5

0 3 4

------ Current Step Cost: 6 - Search Cost: 48 - fringes Size: 22 - Explored Size: 27 -------

1 2 5

6 4 0

8 7 3

------ Current Step Cost: 5 - Search Cost: 49 - fringes Size: 22 - Explored Size: 28 -------

1 5 7

6 2 0

8 3 4

------ Current Step Cost: 3 - Search Cost: 51 - fringes Size: 23 - Explored Size: 29 -------

1 7 2

6 3 5

8 0 4

------ Current Step Cost: 5 - Search Cost: 53 - fringes Size: 24 - Explored Size: 30 -------

1 2 0

3 7 5

6 8 4

------ Current Step Cost: 6 - Search Cost: 55 - fringes Size: 25 - Explored Size: 31 -------

1 7 2

0 6 5

8 3 4

------ Current Step Cost: 5 - Search Cost: 56 - fringes Size: 25 - Explored Size: 32 -------

1 0 2

3 7 5

6 8 4

------ Current Step Cost: 7 - Search Cost: 58 - fringes Size: 26 - Explored Size: 33 -------

0 1 2

3 7 5

6 8 4

------ Current Step Cost: 8 - Search Cost: 60 - fringes Size: 27 - Explored Size: 34 -------

1 0 5

3 2 7

6 8 4

------ Current Step Cost: 5 - Search Cost: 61 - fringes Size: 27 - Explored Size: 35 -------

0 1 5

3 2 7

6 8 4

------ Current Step Cost: 6 - Search Cost: 63 - fringes Size: 28 - Explored Size: 36 -------

1 2 0

6 4 5

8 7 3

------ Current Step Cost: 6 - Search Cost: 64 - fringes Size: 28 - Explored Size: 37 -------

1 2 5

8 6 7

3 0 4

------ Current Step Cost: 3 - Search Cost: 65 - fringes Size: 28 - Explored Size: 38 -------

1 0 2

6 4 5

8 7 3

------ Current Step Cost: 7 - Search Cost: 67 - fringes Size: 29 - Explored Size: 39 -------

0 1 2

6 4 5

8 7 3

------ Current Step Cost: 8 - Search Cost: 69 - fringes Size: 30 - Explored Size: 40 -------

1 2 5

3 8 7

6 0 4

------ Current Step Cost: 5 - Search Cost: 70 - fringes Size: 30 - Explored Size: 41 -------

0 7 2

1 6 5

8 3 4

------ Current Step Cost: 6 - Search Cost: 72 - fringes Size: 31 - Explored Size: 42 -------

6 1 5

8 2 7

0 3 4

------ Current Step Cost: 4 - Search Cost: 73 - fringes Size: 31 - Explored Size: 43 -------

1 2 5

6 3 0

8 4 7

------ Current Step Cost: 3 - Search Cost: 74 - fringes Size: 31 - Explored Size: 44 -------

6 1 5

2 0 7

8 3 4

------ Current Step Cost: 4 - Search Cost: 76 - fringes Size: 32 - Explored Size: 45 -------

1 2 0

6 3 5

8 4 7

------ Current Step Cost: 4 - Search Cost: 79 - fringes Size: 34 - Explored Size: 46 -------

1 0 2

6 3 5

8 4 7

------ Current Step Cost: 5 - Search Cost: 80 - fringes Size: 34 - Explored Size: 47 -------

0 1 2

6 3 5

8 4 7

------ Current Step Cost: 6 - Search Cost: 82 - fringes Size: 35 - Explored Size: 48 -------

6 1 5

2 3 7

8 0 4

------ Current Step Cost: 5 - Search Cost: 83 - fringes Size: 35 - Explored Size: 49 -------

6 1 2

0 3 5

8 4 7

------ Current Step Cost: 7 - Search Cost: 85 - fringes Size: 36 - Explored Size: 50 -------

6 1 5

2 7 0

8 3 4

------ Current Step Cost: 5 - Search Cost: 87 - fringes Size: 37 - Explored Size: 51 -------

6 1 2

3 0 5

8 4 7

------ Current Step Cost: 8 - Search Cost: 89 - fringes Size: 38 - Explored Size: 52 -------

1 7 2

8 6 5

0 3 4

------ Current Step Cost: 6 - Search Cost: 92 - fringes Size: 40 - Explored Size: 53 -------

1 2 5

6 7 4

0 8 3

------ Current Step Cost: 4 - Search Cost: 93 - fringes Size: 40 - Explored Size: 54 -------

2 0 5

1 3 7

6 8 4

------ Current Step Cost: 5 - Search Cost: 94 - fringes Size: 40 - Explored Size: 55 -------

1 2 5

0 7 4

6 8 3

------ Current Step Cost: 5 - Search Cost: 96 - fringes Size: 41 - Explored Size: 56 -------

2 5 0

1 6 7

8 3 4

------ Current Step Cost: 4 - Search Cost: 98 - fringes Size: 42 - Explored Size: 57 -------

1 3 2

6 0 5

8 4 7

------ Current Step Cost: 6 - Search Cost: 99 - fringes Size: 42 - Explored Size: 58 -------

1 2 5

6 0 3

8 4 7

------ Current Step Cost: 4 - Search Cost: 102 - fringes Size: 44 - Explored Size: 59 -------

6 1 2

7 3 5

8 0 4

------ Current Step Cost: 7 - Search Cost: 105 - fringes Size: 46 - Explored Size: 60 -------

2 6 5

1 0 7

8 3 4

------ Current Step Cost: 4 - Search Cost: 107 - fringes Size: 47 - Explored Size: 61 -------

6 1 0

2 7 5

8 3 4

------ Current Step Cost: 6 - Search Cost: 110 - fringes Size: 49 - Explored Size: 62 -------

1 7 2

6 3 5

8 4 0

------ Current Step Cost: 6 - Search Cost: 111 - fringes Size: 49 - Explored Size: 63 -------

6 1 2

8 7 5

3 0 4

------ Current Step Cost: 7 - Search Cost: 112 - fringes Size: 49 - Explored Size: 64 -------

1 2 5

3 7 4

6 8 0

------ Current Step Cost: 6 - Search Cost: 114 - fringes Size: 50 - Explored Size: 65 -------

6 1 2

3 4 5

8 0 7

------ Current Step Cost: 9 - Search Cost: 115 - fringes Size: 50 - Explored Size: 66 -------

1 2 5

3 7 4

6 0 8

------ Current Step Cost: 7 - Search Cost: 117 - fringes Size: 51 - Explored Size: 67 -------

1 0 5

6 2 4

8 7 3

------ Current Step Cost: 5 - Search Cost: 119 - fringes Size: 52 - Explored Size: 68 -------

0 1 5

6 2 4

8 7 3

------ Current Step Cost: 6 - Search Cost: 121 - fringes Size: 53 - Explored Size: 69 -------

1 3 2

6 4 5

8 0 7

------ Current Step Cost: 7 - Search Cost: 122 - fringes Size: 53 - Explored Size: 70 -------

1 5 7

6 0 2

8 3 4

------ Current Step Cost: 4 - Search Cost: 124 - fringes Size: 54 - Explored Size: 71 -------

1 3 2

6 4 5

8 7 0

------ Current Step Cost: 8 - Search Cost: 127 - fringes Size: 56 - Explored Size: 72 -------

1 2 5

0 6 4

8 7 3

------ Current Step Cost: 5 - Search Cost: 128 - fringes Size: 56 - Explored Size: 73 -------

1 2 5

6 4 3

8 7 0

------ Current Step Cost: 6 - Search Cost: 130 - fringes Size: 57 - Explored Size: 74 -------

1 2 5

6 4 3

8 0 7

------ Current Step Cost: 5 - Search Cost: 131 - fringes Size: 57 - Explored Size: 75 -------

0 2 5

1 7 4

6 8 3

------ Current Step Cost: 6 - Search Cost: 132 - fringes Size: 57 - Explored Size: 76 -------

6 1 5

8 2 7

3 0 4

------ Current Step Cost: 5 - Search Cost: 133 - fringes Size: 57 - Explored Size: 77 -------

1 5 7

6 2 4

8 3 0

------ Current Step Cost: 4 - Search Cost: 135 - fringes Size: 58 - Explored Size: 78 -------

1 7 2

6 3 5

0 8 4

------ Current Step Cost: 6 - Search Cost: 136 - fringes Size: 58 - Explored Size: 79 -------

6 1 2

8 0 5

3 7 4

------ Current Step Cost: 8 - Search Cost: 137 - fringes Size: 58 - Explored Size: 80 -------

1 7 2

0 3 5

6 8 4

------ Current Step Cost: 7 - Search Cost: 140 - fringes Size: 60 - Explored Size: 81 -------

1 7 2

6 5 0

8 3 4

------ Current Step Cost: 5 - Search Cost: 142 - fringes Size: 61 - Explored Size: 82 -------

1 5 0

3 2 7

6 8 4

------ Current Step Cost: 6 - Search Cost: 144 - fringes Size: 62 - Explored Size: 83 -------

1 2 5

3 0 4

6 7 8

------ Current Step Cost: 8 - Search Cost: 145 - fringes Size: 62 - Explored Size: 84 -------

6 1 2

3 4 5

8 7 0

------ Current Step Cost: 10 - Search Cost: 148 - fringes Size: 64 - Explored Size: 85 -------

1 2 5

3 4 0

6 7 8

------ Current Step Cost: 9 - Search Cost: 149 - fringes Size: 64 - Explored Size: 86 -------

1 7 2

3 0 5

6 8 4

------ Current Step Cost: 8 - Search Cost: 151 - fringes Size: 65 - Explored Size: 87 -------

1 2 0

3 4 5

6 7 8

------ Current Step Cost: 10 - Search Cost: 153 - fringes Size: 66 - Explored Size: 88 -------

6 1 2

0 4 5

8 7 3

------ Current Step Cost: 9 - Search Cost: 154 - fringes Size: 66 - Explored Size: 89 -------

1 0 2

3 4 5

6 7 8

------ Current Step Cost: 11 - Search Cost: 156 - fringes Size: 67 - Explored Size: 90 -------

0 1 2

3 4 5

6 7 8

------ Current Step Cost: 12 - Search Cost: 158 - fringes Size: 68 - Explored Size: 91 -------

----------- GOAL FOUND AT SEARCH COST OF 158------------

--------------- FINISHED H1, STARTING H2 -------------------

1 2 5

6 0 7

8 3 4

------ Current Step Cost: 0 - Search Cost: 0 - fringes Size: 0 - Explored Size: 1 -------

1 2 5

6 3 7

8 0 4

------ Current Step Cost: 1 - Search Cost: 4 - fringes Size: 3 - Explored Size: 2 -------

1 2 5

6 7 0

8 3 4

------ Current Step Cost: 1 - Search Cost: 6 - fringes Size: 4 - Explored Size: 3 -------

1 2 5

6 3 7

8 4 0

------ Current Step Cost: 2 - Search Cost: 8 - fringes Size: 5 - Explored Size: 4 -------

1 2 5

6 3 7

0 8 4

------ Current Step Cost: 2 - Search Cost: 9 - fringes Size: 5 - Explored Size: 5 -------

1 2 5

6 3 0

8 4 7

------ Current Step Cost: 3 - Search Cost: 10 - fringes Size: 5 - Explored Size: 6 -------

1 2 5

0 3 7

6 8 4

------ Current Step Cost: 3 - Search Cost: 12 - fringes Size: 6 - Explored Size: 7 -------

1 2 0

6 7 5

8 3 4

------ Current Step Cost: 2 - Search Cost: 14 - fringes Size: 7 - Explored Size: 8 -------

1 2 5

3 0 7

6 8 4

------ Current Step Cost: 4 - Search Cost: 15 - fringes Size: 7 - Explored Size: 9 -------

1 0 2

6 7 5

8 3 4

------ Current Step Cost: 3 - Search Cost: 18 - fringes Size: 9 - Explored Size: 10 -------

1 2 5

3 7 0

6 8 4

------ Current Step Cost: 5 - Search Cost: 20 - fringes Size: 10 - Explored Size: 11 -------

0 1 2

6 7 5

8 3 4

------ Current Step Cost: 4 - Search Cost: 22 - fringes Size: 11 - Explored Size: 12 -------

1 2 5

3 7 4

6 8 0

------ Current Step Cost: 6 - Search Cost: 23 - fringes Size: 11 - Explored Size: 13 -------

1 2 0

3 7 5

6 8 4

------ Current Step Cost: 6 - Search Cost: 24 - fringes Size: 11 - Explored Size: 14 -------

1 2 5

3 7 4

6 0 8

------ Current Step Cost: 7 - Search Cost: 25 - fringes Size: 11 - Explored Size: 15 -------

1 0 2

3 7 5

6 8 4

------ Current Step Cost: 7 - Search Cost: 27 - fringes Size: 12 - Explored Size: 16 -------

1 2 5

6 7 4

8 3 0

------ Current Step Cost: 2 - Search Cost: 29 - fringes Size: 13 - Explored Size: 17 -------

1 2 0

6 3 5

8 4 7

------ Current Step Cost: 4 - Search Cost: 30 - fringes Size: 13 - Explored Size: 18 -------

1 2 5

3 0 4

6 7 8

------ Current Step Cost: 8 - Search Cost: 31 - fringes Size: 13 - Explored Size: 19 -------

0 1 2

3 7 5

6 8 4

------ Current Step Cost: 8 - Search Cost: 34 - fringes Size: 15 - Explored Size: 20 -------

1 2 5

3 4 0

6 7 8

------ Current Step Cost: 9 - Search Cost: 35 - fringes Size: 15 - Explored Size: 21 -------

1 0 2

6 3 5

8 4 7

------ Current Step Cost: 5 - Search Cost: 37 - fringes Size: 16 - Explored Size: 22 -------

1 2 0

3 4 5

6 7 8

------ Current Step Cost: 10 - Search Cost: 39 - fringes Size: 17 - Explored Size: 23 -------

0 1 2

6 3 5

8 4 7

------ Current Step Cost: 6 - Search Cost: 40 - fringes Size: 17 - Explored Size: 24 -------

1 0 2

3 4 5

6 7 8

------ Current Step Cost: 11 - Search Cost: 41 - fringes Size: 17 - Explored Size: 25 -------

0 1 2

3 4 5

6 7 8

------ Current Step Cost: 12 - Search Cost: 43 - fringes Size: 18 - Explored Size: 26 -------

----------- GOAL FOUND AT SEARCH COST OF 43------------

--------------- FINISHED H2 -------------------

Solved With H1

Depth: 12 - Search Cost: 158 - Fringe Size: 68 - Explored Set Size: 90 - Total Time: 35 ms

Solved Using H2

Depth: 12 - Search Cost: 43 - Fringe Size: 18 - Explored Set Size: 25 - Total Time: 2 ms

d | Total Cases | Search Cost H1 | Total Time H1 | Search Cost H2 | Total Time H2

12 | 1 | 158 | 35 | 43 | 2

8-Puzzle Problem

Please select an option:

1) Random Puzzle

2) User-Defined Puzzle

3) Exit

2

Enter a new puzzle:

1 6 2 8 0 4 3 7 5

Empty Pos: 4

1 6 2

8 0 4

3 7 5

---------- STARTING TO SOLVE PUZZLE USING H1 --------

1 6 2

8 0 4

3 7 5

------ Current Step Cost: 0 - Search Cost: 0 - fringes Size: 0 - Explored Size: 1 -------

1 6 2

8 4 0

3 7 5

------ Current Step Cost: 1 - Search Cost: 4 - fringes Size: 3 - Explored Size: 2 -------

1 6 2

8 4 5

3 7 0

------ Current Step Cost: 2 - Search Cost: 6 - fringes Size: 4 - Explored Size: 3 -------

1 0 2

8 6 4

3 7 5

------ Current Step Cost: 1 - Search Cost: 7 - fringes Size: 4 - Explored Size: 4 -------

0 1 2

8 6 4

3 7 5

------ Current Step Cost: 2 - Search Cost: 9 - fringes Size: 5 - Explored Size: 5 -------

1 6 2

0 8 4

3 7 5

------ Current Step Cost: 1 - Search Cost: 10 - fringes Size: 5 - Explored Size: 6 -------

0 6 2

1 8 4

3 7 5

------ Current Step Cost: 2 - Search Cost: 12 - fringes Size: 6 - Explored Size: 7 -------

1 6 2

3 8 4

0 7 5

------ Current Step Cost: 2 - Search Cost: 13 - fringes Size: 6 - Explored Size: 8 -------

1 6 0

8 4 2

3 7 5

------ Current Step Cost: 2 - Search Cost: 14 - fringes Size: 6 - Explored Size: 9 -------

1 6 2

8 7 4

3 0 5

------ Current Step Cost: 1 - Search Cost: 15 - fringes Size: 6 - Explored Size: 10 -------

8 1 2

0 6 4

3 7 5

------ Current Step Cost: 3 - Search Cost: 17 - fringes Size: 7 - Explored Size: 11 -------

1 6 2

8 4 5

3 0 7

------ Current Step Cost: 3 - Search Cost: 19 - fringes Size: 8 - Explored Size: 12 -------

8 1 2

3 6 4

0 7 5

------ Current Step Cost: 4 - Search Cost: 21 - fringes Size: 9 - Explored Size: 13 -------

1 6 2

8 4 5

0 3 7

------ Current Step Cost: 4 - Search Cost: 22 - fringes Size: 9 - Explored Size: 14 -------

8 1 2

6 0 4

3 7 5

------ Current Step Cost: 4 - Search Cost: 23 - fringes Size: 9 - Explored Size: 15 -------

1 6 2

3 8 4

7 0 5

------ Current Step Cost: 3 - Search Cost: 26 - fringes Size: 11 - Explored Size: 16 -------

8 1 2

6 4 0

3 7 5

------ Current Step Cost: 5 - Search Cost: 28 - fringes Size: 12 - Explored Size: 17 -------

1 2 0

8 6 4

3 7 5

------ Current Step Cost: 2 - Search Cost: 30 - fringes Size: 13 - Explored Size: 18 -------

8 1 2

6 4 5

3 7 0

------ Current Step Cost: 6 - Search Cost: 31 - fringes Size: 13 - Explored Size: 19 -------

6 0 2

1 8 4

3 7 5

------ Current Step Cost: 3 - Search Cost: 32 - fringes Size: 13 - Explored Size: 20 -------

1 6 2

8 7 4

3 5 0

------ Current Step Cost: 2 - Search Cost: 34 - fringes Size: 14 - Explored Size: 21 -------

1 0 6

8 4 2

3 7 5

------ Current Step Cost: 3 - Search Cost: 35 - fringes Size: 14 - Explored Size: 22 -------

0 1 6

8 4 2

3 7 5

------ Current Step Cost: 4 - Search Cost: 37 - fringes Size: 15 - Explored Size: 23 -------

1 6 2

8 7 4

0 3 5

------ Current Step Cost: 2 - Search Cost: 38 - fringes Size: 15 - Explored Size: 24 -------

8 1 6

0 4 2

3 7 5

------ Current Step Cost: 5 - Search Cost: 39 - fringes Size: 15 - Explored Size: 25 -------

1 6 2

0 7 4

8 3 5

------ Current Step Cost: 3 - Search Cost: 41 - fringes Size: 16 - Explored Size: 26 -------

8 1 2

3 6 4

7 0 5

------ Current Step Cost: 5 - Search Cost: 43 - fringes Size: 17 - Explored Size: 27 -------

1 2 4

8 6 0

3 7 5

------ Current Step Cost: 3 - Search Cost: 45 - fringes Size: 18 - Explored Size: 28 -------

1 6 2

0 4 5

8 3 7

------ Current Step Cost: 5 - Search Cost: 47 - fringes Size: 19 - Explored Size: 29 -------

8 1 6

3 4 2

0 7 5

------ Current Step Cost: 6 - Search Cost: 49 - fringes Size: 20 - Explored Size: 30 -------

0 6 2

1 7 4

8 3 5

------ Current Step Cost: 4 - Search Cost: 50 - fringes Size: 20 - Explored Size: 31 -------

1 6 2

8 0 5

3 4 7

------ Current Step Cost: 4 - Search Cost: 51 - fringes Size: 20 - Explored Size: 32 -------

1 2 4

8 6 5

3 7 0

------ Current Step Cost: 4 - Search Cost: 54 - fringes Size: 22 - Explored Size: 33 -------

1 6 2

3 8 4

7 5 0

------ Current Step Cost: 4 - Search Cost: 55 - fringes Size: 22 - Explored Size: 34 -------

0 6 2

1 4 5

8 3 7

------ Current Step Cost: 6 - Search Cost: 56 - fringes Size: 22 - Explored Size: 35 -------

1 6 2

8 7 0

3 5 4

------ Current Step Cost: 3 - Search Cost: 57 - fringes Size: 22 - Explored Size: 36 -------

1 6 2

3 0 4

7 8 5

------ Current Step Cost: 4 - Search Cost: 59 - fringes Size: 23 - Explored Size: 37 -------

6 8 2

1 0 4

3 7 5

------ Current Step Cost: 4 - Search Cost: 62 - fringes Size: 25 - Explored Size: 38 -------

1 6 2

3 4 0

7 8 5

------ Current Step Cost: 5 - Search Cost: 65 - fringes Size: 27 - Explored Size: 39 -------

6 8 2

1 4 0

3 7 5

------ Current Step Cost: 5 - Search Cost: 67 - fringes Size: 28 - Explored Size: 40 -------

1 6 2

3 4 5

7 8 0

------ Current Step Cost: 6 - Search Cost: 69 - fringes Size: 29 - Explored Size: 41 -------

6 8 2

1 4 5

3 7 0

------ Current Step Cost: 6 - Search Cost: 70 - fringes Size: 29 - Explored Size: 42 -------

1 6 2

3 4 5

7 0 8

------ Current Step Cost: 7 - Search Cost: 71 - fringes Size: 29 - Explored Size: 43 -------

1 6 2

3 4 5

0 7 8

------ Current Step Cost: 8 - Search Cost: 73 - fringes Size: 30 - Explored Size: 44 -------

6 2 0

1 8 4

3 7 5

------ Current Step Cost: 4 - Search Cost: 74 - fringes Size: 30 - Explored Size: 45 -------

1 6 2

7 0 4

8 3 5

------ Current Step Cost: 4 - Search Cost: 75 - fringes Size: 30 - Explored Size: 46 -------

8 1 2

3 0 4

7 6 5

------ Current Step Cost: 6 - Search Cost: 78 - fringes Size: 32 - Explored Size: 47 -------

1 2 4

8 0 6

3 7 5

------ Current Step Cost: 4 - Search Cost: 81 - fringes Size: 34 - Explored Size: 48 -------

1 6 2

7 4 0

8 3 5

------ Current Step Cost: 5 - Search Cost: 84 - fringes Size: 36 - Explored Size: 49 -------

8 1 2

3 4 0

7 6 5

------ Current Step Cost: 7 - Search Cost: 86 - fringes Size: 37 - Explored Size: 50 -------

8 0 2

6 1 4

3 7 5

------ Current Step Cost: 5 - Search Cost: 88 - fringes Size: 38 - Explored Size: 51 -------

1 6 2

7 4 5

8 3 0

------ Current Step Cost: 6 - Search Cost: 90 - fringes Size: 39 - Explored Size: 52 -------

8 1 2

3 4 5

7 6 0

------ Current Step Cost: 8 - Search Cost: 91 - fringes Size: 39 - Explored Size: 53 -------

0 8 2

6 1 4

3 7 5

------ Current Step Cost: 6 - Search Cost: 92 - fringes Size: 39 - Explored Size: 54 -------

1 0 2

8 6 5

3 4 7

------ Current Step Cost: 5 - Search Cost: 93 - fringes Size: 39 - Explored Size: 55 -------

0 1 2

8 6 5

3 4 7

------ Current Step Cost: 6 - Search Cost: 95 - fringes Size: 40 - Explored Size: 56 -------

8 1 2

6 7 4

3 0 5

------ Current Step Cost: 5 - Search Cost: 96 - fringes Size: 40 - Explored Size: 57 -------

1 6 2

0 8 5

3 4 7

------ Current Step Cost: 5 - Search Cost: 98 - fringes Size: 41 - Explored Size: 58 -------

8 1 2

3 6 4

7 5 0

------ Current Step Cost: 6 - Search Cost: 100 - fringes Size: 42 - Explored Size: 59 -------

0 6 2

1 8 5

3 4 7

------ Current Step Cost: 6 - Search Cost: 101 - fringes Size: 42 - Explored Size: 60 -------

1 6 2

3 8 5

0 4 7

------ Current Step Cost: 6 - Search Cost: 102 - fringes Size: 42 - Explored Size: 61 -------

8 1 2

6 4 5

3 0 7

------ Current Step Cost: 7 - Search Cost: 103 - fringes Size: 42 - Explored Size: 62 -------

1 0 2

3 6 4

7 8 5

------ Current Step Cost: 5 - Search Cost: 105 - fringes Size: 43 - Explored Size: 63 -------

0 1 2

3 6 4

7 8 5

------ Current Step Cost: 6 - Search Cost: 107 - fringes Size: 44 - Explored Size: 64 -------

1 6 2

3 8 0

7 5 4

------ Current Step Cost: 5 - Search Cost: 108 - fringes Size: 44 - Explored Size: 65 -------

6 8 2

0 1 4

3 7 5

------ Current Step Cost: 5 - Search Cost: 110 - fringes Size: 45 - Explored Size: 66 -------

1 6 2

8 0 7

3 5 4

------ Current Step Cost: 4 - Search Cost: 111 - fringes Size: 45 - Explored Size: 67 -------

6 8 2

3 1 4

0 7 5

------ Current Step Cost: 6 - Search Cost: 114 - fringes Size: 47 - Explored Size: 68 -------

8 1 0

6 4 2

3 7 5

------ Current Step Cost: 6 - Search Cost: 115 - fringes Size: 47 - Explored Size: 69 -------

1 4 6

8 0 2

3 7 5

------ Current Step Cost: 4 - Search Cost: 116 - fringes Size: 47 - Explored Size: 70 -------

1 6 0

8 7 2

3 5 4

------ Current Step Cost: 4 - Search Cost: 119 - fringes Size: 49 - Explored Size: 71 -------

1 4 6

8 2 0

3 7 5

------ Current Step Cost: 5 - Search Cost: 120 - fringes Size: 49 - Explored Size: 72 -------

1 6 2

7 3 4

8 0 5

------ Current Step Cost: 5 - Search Cost: 122 - fringes Size: 50 - Explored Size: 73 -------

1 4 6

8 2 5

3 7 0

------ Current Step Cost: 6 - Search Cost: 124 - fringes Size: 51 - Explored Size: 74 -------

6 2 4

1 8 0

3 7 5

------ Current Step Cost: 5 - Search Cost: 125 - fringes Size: 51 - Explored Size: 75 -------

1 0 4

8 2 6

3 7 5

------ Current Step Cost: 5 - Search Cost: 127 - fringes Size: 52 - Explored Size: 76 -------

0 1 4

8 2 6

3 7 5

------ Current Step Cost: 6 - Search Cost: 129 - fringes Size: 53 - Explored Size: 77 -------

1 6 2

4 0 5

8 3 7

------ Current Step Cost: 6 - Search Cost: 130 - fringes Size: 53 - Explored Size: 78 -------

6 8 2

1 4 5

3 0 7

------ Current Step Cost: 7 - Search Cost: 133 - fringes Size: 55 - Explored Size: 79 -------

8 1 6

3 4 2

7 0 5

------ Current Step Cost: 7 - Search Cost: 135 - fringes Size: 56 - Explored Size: 80 -------

1 2 4

8 6 5

3 0 7

------ Current Step Cost: 5 - Search Cost: 137 - fringes Size: 57 - Explored Size: 81 -------

8 1 6

4 0 2

3 7 5

------ Current Step Cost: 6 - Search Cost: 139 - fringes Size: 58 - Explored Size: 82 -------

8 1 2

0 6 5

3 4 7

------ Current Step Cost: 7 - Search Cost: 142 - fringes Size: 60 - Explored Size: 83 -------

8 1 2

6 7 4

0 3 5

------ Current Step Cost: 6 - Search Cost: 144 - fringes Size: 61 - Explored Size: 84 -------

1 2 4

0 8 6

3 7 5

------ Current Step Cost: 5 - Search Cost: 145 - fringes Size: 61 - Explored Size: 85 -------

8 1 2

0 7 4

6 3 5

------ Current Step Cost: 7 - Search Cost: 147 - fringes Size: 62 - Explored Size: 86 -------

1 2 4

3 8 6

0 7 5

------ Current Step Cost: 6 - Search Cost: 149 - fringes Size: 63 - Explored Size: 87 -------

1 6 2

8 5 0

3 4 7

------ Current Step Cost: 5 - Search Cost: 150 - fringes Size: 63 - Explored Size: 88 -------

8 1 2

3 6 0

7 5 4

------ Current Step Cost: 7 - Search Cost: 152 - fringes Size: 64 - Explored Size: 89 -------

8 1 2

3 4 5

7 0 6

------ Current Step Cost: 9 - Search Cost: 154 - fringes Size: 65 - Explored Size: 90 -------

1 6 2

7 4 5

8 0 3

------ Current Step Cost: 7 - Search Cost: 156 - fringes Size: 66 - Explored Size: 91 -------

6 0 2

1 7 4

8 3 5

------ Current Step Cost: 5 - Search Cost: 158 - fringes Size: 67 - Explored Size: 92 -------

8 1 2

3 4 5

0 7 6

------ Current Step Cost: 10 - Search Cost: 160 - fringes Size: 68 - Explored Size: 93 -------

1 0 2

8 6 7

3 5 4

------ Current Step Cost: 5 - Search Cost: 161 - fringes Size: 68 - Explored Size: 94 -------

0 1 2

8 6 7

3 5 4

------ Current Step Cost: 6 - Search Cost: 163 - fringes Size: 69 - Explored Size: 95 -------

1 6 2

8 5 7

3 0 4

------ Current Step Cost: 5 - Search Cost: 164 - fringes Size: 69 - Explored Size: 96 -------

1 6 2

0 4 5

3 7 8

------ Current Step Cost: 9 - Search Cost: 166 - fringes Size: 70 - Explored Size: 97 -------

8 1 2

6 4 5

0 3 7

------ Current Step Cost: 8 - Search Cost: 168 - fringes Size: 71 - Explored Size: 98 -------

0 6 2

1 4 5

3 7 8

------ Current Step Cost: 10 - Search Cost: 169 - fringes Size: 71 - Explored Size: 99 -------

8 1 2

0 4 5

6 3 7

------ Current Step Cost: 9 - Search Cost: 170 - fringes Size: 71 - Explored Size: 100 -------

6 0 2

1 4 5

8 3 7

------ Current Step Cost: 7 - Search Cost: 172 - fringes Size: 72 - Explored Size: 101 -------

0 1 2

8 4 5

6 3 7

------ Current Step Cost: 10 - Search Cost: 174 - fringes Size: 73 - Explored Size: 102 -------

1 4 6

0 8 2

3 7 5

------ Current Step Cost: 5 - Search Cost: 175 - fringes Size: 73 - Explored Size: 103 -------

1 6 2

0 3 4

7 8 5

------ Current Step Cost: 5 - Search Cost: 177 - fringes Size: 74 - Explored Size: 104 -------

0 4 6

1 8 2

3 7 5

------ Current Step Cost: 6 - Search Cost: 179 - fringes Size: 75 - Explored Size: 105 -------

1 4 6

3 8 2

0 7 5

------ Current Step Cost: 6 - Search Cost: 180 - fringes Size: 75 - Explored Size: 106 -------

0 6 2

1 3 4

7 8 5

------ Current Step Cost: 6 - Search Cost: 181 - fringes Size: 75 - Explored Size: 107 -------

8 1 2

6 7 4

3 5 0

------ Current Step Cost: 6 - Search Cost: 182 - fringes Size: 75 - Explored Size: 108 -------

1 6 2

3 8 5

4 0 7

------ Current Step Cost: 7 - Search Cost: 183 - fringes Size: 75 - Explored Size: 109 -------

6 2 4

1 8 5

3 7 0

------ Current Step Cost: 6 - Search Cost: 185 - fringes Size: 76 - Explored Size: 110 -------

1 6 2

3 8 5

4 7 0

------ Current Step Cost: 8 - Search Cost: 186 - fringes Size: 76 - Explored Size: 111 -------

6 8 2

1 7 4

3 0 5

------ Current Step Cost: 5 - Search Cost: 187 - fringes Size: 76 - Explored Size: 112 -------

1 6 2

0 8 7

3 5 4

------ Current Step Cost: 5 - Search Cost: 189 - fringes Size: 77 - Explored Size: 113 -------

1 6 0

3 4 2

7 8 5

------ Current Step Cost: 6 - Search Cost: 191 - fringes Size: 78 - Explored Size: 114 -------

0 6 2

1 8 7

3 5 4

------ Current Step Cost: 6 - Search Cost: 192 - fringes Size: 78 - Explored Size: 115 -------

1 6 2

3 8 7

0 5 4

------ Current Step Cost: 6 - Search Cost: 193 - fringes Size: 78 - Explored Size: 116 -------

6 8 0

1 4 2

3 7 5

------ Current Step Cost: 6 - Search Cost: 194 - fringes Size: 78 - Explored Size: 117 -------

1 6 2

3 0 8

7 5 4

------ Current Step Cost: 6 - Search Cost: 195 - fringes Size: 78 - Explored Size: 118 -------

1 6 2

3 0 5

7 4 8

------ Current Step Cost: 8 - Search Cost: 198 - fringes Size: 80 - Explored Size: 119 -------

8 1 2

3 6 5

0 4 7

------ Current Step Cost: 8 - Search Cost: 201 - fringes Size: 82 - Explored Size: 120 -------

1 0 2

7 6 4

8 3 5

------ Current Step Cost: 5 - Search Cost: 202 - fringes Size: 82 - Explored Size: 121 -------

0 1 2

7 6 4

8 3 5

------ Current Step Cost: 6 - Search Cost: 204 - fringes Size: 83 - Explored Size: 122 -------

0 2 4

1 8 6

3 7 5

------ Current Step Cost: 6 - Search Cost: 205 - fringes Size: 83 - Explored Size: 123 -------

0 1 2

8 7 4

6 3 5

------ Current Step Cost: 8 - Search Cost: 206 - fringes Size: 83 - Explored Size: 124 -------

8 1 4

0 2 6

3 7 5

------ Current Step Cost: 7 - Search Cost: 207 - fringes Size: 83 - Explored Size: 125 -------

8 0 1

6 4 2

3 7 5

------ Current Step Cost: 7 - Search Cost: 209 - fringes Size: 84 - Explored Size: 126 -------

6 7 2

1 0 4

8 3 5

------ Current Step Cost: 6 - Search Cost: 211 - fringes Size: 85 - Explored Size: 127 -------

0 8 1

6 4 2

3 7 5

------ Current Step Cost: 8 - Search Cost: 214 - fringes Size: 87 - Explored Size: 128 -------

6 7 2

1 4 0

8 3 5

------ Current Step Cost: 7 - Search Cost: 215 - fringes Size: 87 - Explored Size: 129 -------

8 1 2

0 3 4

7 6 5

------ Current Step Cost: 7 - Search Cost: 217 - fringes Size: 88 - Explored Size: 130 -------

6 7 2

1 4 5

8 3 0

------ Current Step Cost: 8 - Search Cost: 219 - fringes Size: 89 - Explored Size: 131 -------

1 0 6

8 7 2

3 5 4

------ Current Step Cost: 5 - Search Cost: 220 - fringes Size: 89 - Explored Size: 132 -------

0 1 6

8 7 2

3 5 4

------ Current Step Cost: 6 - Search Cost: 222 - fringes Size: 90 - Explored Size: 133 -------

1 6 0

3 8 2

7 5 4

------ Current Step Cost: 6 - Search Cost: 223 - fringes Size: 90 - Explored Size: 134 -------

1 6 2

8 5 7

0 3 4

------ Current Step Cost: 6 - Search Cost: 224 - fringes Size: 90 - Explored Size: 135 -------

8 1 0

3 4 2

7 6 5

------ Current Step Cost: 8 - Search Cost: 225 - fringes Size: 90 - Explored Size: 136 -------

1 2 4

8 7 6

3 0 5

------ Current Step Cost: 5 - Search Cost: 226 - fringes Size: 90 - Explored Size: 137 -------

1 4 0

8 2 6

3 7 5

------ Current Step Cost: 6 - Search Cost: 228 - fringes Size: 91 - Explored Size: 138 -------

1 6 2

7 3 4

8 5 0

------ Current Step Cost: 6 - Search Cost: 228 - fringes Size: 90 - Explored Size: 139 -------

1 2 0

8 6 5

3 4 7

------ Current Step Cost: 6 - Search Cost: 229 - fringes Size: 90 - Explored Size: 140 -------

1 6 0

7 4 2

8 3 5

------ Current Step Cost: 6 - Search Cost: 230 - fringes Size: 90 - Explored Size: 141 -------

8 0 2

3 1 4

7 6 5

------ Current Step Cost: 7 - Search Cost: 231 - fringes Size: 90 - Explored Size: 142 -------

1 6 2

7 3 4

0 8 5

------ Current Step Cost: 6 - Search Cost: 233 - fringes Size: 91 - Explored Size: 143 -------

6 2 4

1 0 8

3 7 5

------ Current Step Cost: 6 - Search Cost: 233 - fringes Size: 90 - Explored Size: 144 -------

0 8 2

3 1 4

7 6 5

------ Current Step Cost: 8 - Search Cost: 236 - fringes Size: 92 - Explored Size: 145 -------

1 6 2

3 0 5

4 8 7

------ Current Step Cost: 8 - Search Cost: 237 - fringes Size: 92 - Explored Size: 146 -------

6 8 2

1 7 4

0 3 5

------ Current Step Cost: 6 - Search Cost: 240 - fringes Size: 94 - Explored Size: 147 -------

8 2 0

6 1 4

3 7 5

------ Current Step Cost: 6 - Search Cost: 241 - fringes Size: 94 - Explored Size: 148 -------

6 8 2

1 7 4

3 5 0

------ Current Step Cost: 6 - Search Cost: 242 - fringes Size: 94 - Explored Size: 149 -------

1 0 2

3 6 8

7 5 4

------ Current Step Cost: 7 - Search Cost: 243 - fringes Size: 94 - Explored Size: 150 -------

0 1 2

3 6 8

7 5 4

------ Current Step Cost: 8 - Search Cost: 245 - fringes Size: 95 - Explored Size: 151 -------

1 2 0

3 6 4

7 8 5

------ Current Step Cost: 6 - Search Cost: 246 - fringes Size: 95 - Explored Size: 152 -------

8 1 6

4 2 0

3 7 5

------ Current Step Cost: 7 - Search Cost: 247 - fringes Size: 95 - Explored Size: 153 -------

1 6 2

3 5 8

7 0 4

------ Current Step Cost: 7 - Search Cost: 249 - fringes Size: 96 - Explored Size: 154 -------

1 0 2

3 6 5

7 4 8

------ Current Step Cost: 9 - Search Cost: 251 - fringes Size: 97 - Explored Size: 155 -------

0 1 2

3 6 5

7 4 8

------ Current Step Cost: 10 - Search Cost: 253 - fringes Size: 98 - Explored Size: 156 -------

8 1 2

3 6 5

4 0 7

------ Current Step Cost: 9 - Search Cost: 254 - fringes Size: 98 - Explored Size: 157 -------

1 2 4

8 6 5

0 3 7

------ Current Step Cost: 6 - Search Cost: 256 - fringes Size: 99 - Explored Size: 158 -------

8 1 2

3 6 5

4 7 0

------ Current Step Cost: 10 - Search Cost: 257 - fringes Size: 99 - Explored Size: 159 -------

8 1 6

3 4 2

7 5 0

------ Current Step Cost: 8 - Search Cost: 258 - fringes Size: 99 - Explored Size: 160 -------

8 1 4

3 2 6

0 7 5

------ Current Step Cost: 8 - Search Cost: 259 - fringes Size: 99 - Explored Size: 161 -------

8 1 2

6 0 5

3 4 7

------ Current Step Cost: 8 - Search Cost: 260 - fringes Size: 99 - Explored Size: 162 -------

6 8 2

1 4 5

0 3 7

------ Current Step Cost: 8 - Search Cost: 262 - fringes Size: 100 - Explored Size: 163 -------

1 6 2

7 4 5

0 8 3

------ Current Step Cost: 8 - Search Cost: 263 - fringes Size: 100 - Explored Size: 164 -------

8 1 2

6 0 5

3 4 7

------ Current Step Cost: 8 - Search Cost: 264 - fringes Size: 100 - Explored Size: 164 -------

0 1 2

8 3 4

7 6 5

------ Current Step Cost: 8 - Search Cost: 266 - fringes Size: 101 - Explored Size: 165 -------

8 1 2

7 0 4

6 3 5

------ Current Step Cost: 8 - Search Cost: 267 - fringes Size: 101 - Explored Size: 166 -------

1 0 6

3 4 2

7 8 5

------ Current Step Cost: 7 - Search Cost: 270 - fringes Size: 103 - Explored Size: 167 -------

0 1 6

3 4 2

7 8 5

------ Current Step Cost: 8 - Search Cost: 272 - fringes Size: 104 - Explored Size: 168 -------

1 6 2

8 5 7

3 4 0

------ Current Step Cost: 6 - Search Cost: 273 - fringes Size: 104 - Explored Size: 169 -------

8 1 2

3 0 6

7 5 4

------ Current Step Cost: 8 - Search Cost: 273 - fringes Size: 103 - Explored Size: 170 -------

6 8 2

0 1 4

3 7 5

------ Current Step Cost: 7 - Search Cost: 276 - fringes Size: 105 - Explored Size: 170 -------

8 1 2

6 7 0

3 5 4

------ Current Step Cost: 7 - Search Cost: 276 - fringes Size: 104 - Explored Size: 171 -------

8 1 2

0 6 7

3 5 4

------ Current Step Cost: 7 - Search Cost: 278 - fringes Size: 105 - Explored Size: 172 -------

8 1 6

4 2 5

3 7 0

------ Current Step Cost: 8 - Search Cost: 280 - fringes Size: 106 - Explored Size: 173 -------

1 6 2

3 5 8

0 7 4

------ Current Step Cost: 8 - Search Cost: 281 - fringes Size: 106 - Explored Size: 174 -------

1 4 6

8 7 2

3 0 5

------ Current Step Cost: 5 - Search Cost: 282 - fringes Size: 106 - Explored Size: 175 -------

6 8 2

3 1 4

7 0 5

------ Current Step Cost: 7 - Search Cost: 284 - fringes Size: 107 - Explored Size: 176 -------

1 6 2

8 5 7

3 4 0

------ Current Step Cost: 6 - Search Cost: 286 - fringes Size: 108 - Explored Size: 176 -------

1 4 0

8 2 6

3 7 5

------ Current Step Cost: 6 - Search Cost: 286 - fringes Size: 107 - Explored Size: 176 -------

1 6 2

7 3 4

0 8 5

------ Current Step Cost: 6 - Search Cost: 286 - fringes Size: 106 - Explored Size: 176 -------

7 1 2

0 6 4

8 3 5

------ Current Step Cost: 7 - Search Cost: 286 - fringes Size: 105 - Explored Size: 177 -------

6 0 2

1 8 5

3 4 7

------ Current Step Cost: 7 - Search Cost: 288 - fringes Size: 106 - Explored Size: 178 -------

8 1 2

7 4 0

6 3 5

------ Current Step Cost: 9 - Search Cost: 290 - fringes Size: 107 - Explored Size: 179 -------

8 1 2

3 6 7

0 5 4

------ Current Step Cost: 8 - Search Cost: 292 - fringes Size: 108 - Explored Size: 180 -------

1 0 2

4 6 5

8 3 7

------ Current Step Cost: 7 - Search Cost: 293 - fringes Size: 108 - Explored Size: 181 -------

0 1 2

4 6 5

8 3 7

------ Current Step Cost: 8 - Search Cost: 295 - fringes Size: 109 - Explored Size: 182 -------

1 6 2

4 3 5

8 0 7

------ Current Step Cost: 7 - Search Cost: 296 - fringes Size: 109 - Explored Size: 183 -------

8 1 2

7 4 5

6 3 0

------ Current Step Cost: 10 - Search Cost: 298 - fringes Size: 110 - Explored Size: 184 -------

3 1 2

0 6 4

7 8 5

------ Current Step Cost: 7 - Search Cost: 299 - fringes Size: 110 - Explored Size: 185 -------

1 6 2

4 3 5

8 7 0

------ Current Step Cost: 8 - Search Cost: 301 - fringes Size: 111 - Explored Size: 186 -------

1 2 4

8 0 5

3 6 7

------ Current Step Cost: 6 - Search Cost: 302 - fringes Size: 111 - Explored Size: 187 -------

1 6 2

3 8 7

5 0 4

------ Current Step Cost: 7 - Search Cost: 305 - fringes Size: 113 - Explored Size: 188 -------

6 0 8

1 4 2

3 7 5

------ Current Step Cost: 7 - Search Cost: 307 - fringes Size: 114 - Explored Size: 189 -------

0 6 8

1 4 2

3 7 5

------ Current Step Cost: 8 - Search Cost: 309 - fringes Size: 115 - Explored Size: 190 -------

6 2 4

1 8 5

3 0 7

------ Current Step Cost: 7 - Search Cost: 310 - fringes Size: 115 - Explored Size: 191 -------

1 4 6

3 8 2

7 0 5

------ Current Step Cost: 7 - Search Cost: 312 - fringes Size: 116 - Explored Size: 192 -------

6 8 2

0 7 4

1 3 5

------ Current Step Cost: 7 - Search Cost: 314 - fringes Size: 117 - Explored Size: 193 -------

8 1 2

7 3 4

0 6 5

------ Current Step Cost: 8 - Search Cost: 316 - fringes Size: 118 - Explored Size: 194 -------

1 6 2

4 0 5

3 7 8

------ Current Step Cost: 10 - Search Cost: 317 - fringes Size: 118 - Explored Size: 195 -------

8 1 2

7 3 4

6 0 5

------ Current Step Cost: 9 - Search Cost: 320 - fringes Size: 120 - Explored Size: 196 -------

8 1 2

0 4 5

3 7 6

------ Current Step Cost: 11 - Search Cost: 321 - fringes Size: 120 - Explored Size: 197 -------

1 6 0

8 5 2

3 4 7

------ Current Step Cost: 6 - Search Cost: 323 - fringes Size: 121 - Explored Size: 198 -------

8 1 0

3 6 2

7 5 4

------ Current Step Cost: 8 - Search Cost: 324 - fringes Size: 121 - Explored Size: 199 -------

1 2 0

8 6 7

3 5 4

------ Current Step Cost: 6 - Search Cost: 325 - fringes Size: 121 - Explored Size: 200 -------

8 1 2

3 0 5

7 4 6

------ Current Step Cost: 10 - Search Cost: 326 - fringes Size: 121 - Explored Size: 201 -------

1 6 2

7 0 5

8 4 3

------ Current Step Cost: 8 - Search Cost: 329 - fringes Size: 123 - Explored Size: 202 -------

1 2 0

7 6 4

8 3 5

------ Current Step Cost: 6 - Search Cost: 332 - fringes Size: 125 - Explored Size: 203 -------

8 1 2

4 0 5

6 3 7

------ Current Step Cost: 10 - Search Cost: 333 - fringes Size: 125 - Explored Size: 204 -------

4 0 6

1 8 2

3 7 5

------ Current Step Cost: 7 - Search Cost: 336 - fringes Size: 127 - Explored Size: 205 -------

8 1 4

2 0 6

3 7 5

------ Current Step Cost: 8 - Search Cost: 338 - fringes Size: 128 - Explored Size: 206 -------

2 0 4

1 8 6

3 7 5

------ Current Step Cost: 7 - Search Cost: 341 - fringes Size: 130 - Explored Size: 207 -------

1 2 4

8 7 6

3 5 0

------ Current Step Cost: 6 - Search Cost: 343 - fringes Size: 131 - Explored Size: 208 -------

8 1 6

0 7 2

3 5 4

------ Current Step Cost: 7 - Search Cost: 344 - fringes Size: 131 - Explored Size: 209 -------

6 7 2

1 4 5

8 0 3

------ Current Step Cost: 9 - Search Cost: 346 - fringes Size: 132 - Explored Size: 210 -------

6 4 2

1 0 5

8 3 7

------ Current Step Cost: 8 - Search Cost: 348 - fringes Size: 133 - Explored Size: 211 -------

1 0 6

3 8 2

7 5 4

------ Current Step Cost: 7 - Search Cost: 351 - fringes Size: 135 - Explored Size: 212 -------

0 1 6

3 8 2

7 5 4

------ Current Step Cost: 8 - Search Cost: 353 - fringes Size: 136 - Explored Size: 213 -------

8 1 6

3 7 2

0 5 4

------ Current Step Cost: 8 - Search Cost: 354 - fringes Size: 136 - Explored Size: 214 -------

1 6 2

0 5 7

8 3 4

------ Current Step Cost: 7 - Search Cost: 355 - fringes Size: 136 - Explored Size: 215 -------

1 2 4

8 7 6

0 3 5

------ Current Step Cost: 6 - Search Cost: 357 - fringes Size: 137 - Explored Size: 216 -------

1 6 2

7 3 0

8 5 4

------ Current Step Cost: 7 - Search Cost: 358 - fringes Size: 137 - Explored Size: 217 -------

6 2 4

0 1 8

3 7 5

------ Current Step Cost: 7 - Search Cost: 360 - fringes Size: 138 - Explored Size: 218 -------

0 6 2

1 5 7

8 3 4

------ Current Step Cost: 8 - Search Cost: 362 - fringes Size: 139 - Explored Size: 219 -------

1 0 6

7 4 2

8 3 5

------ Current Step Cost: 7 - Search Cost: 363 - fringes Size: 139 - Explored Size: 220 -------

0 1 6

7 4 2

8 3 5

------ Current Step Cost: 8 - Search Cost: 365 - fringes Size: 140 - Explored Size: 221 -------

0 2 4

6 1 8

3 7 5

------ Current Step Cost: 8 - Search Cost: 366 - fringes Size: 140 - Explored Size: 222 -------

6 2 4

3 1 8

0 7 5

------ Current Step Cost: 8 - Search Cost: 367 - fringes Size: 140 - Explored Size: 223 -------

6 2 0

1 4 5

8 3 7

------ Current Step Cost: 8 - Search Cost: 368 - fringes Size: 140 - Explored Size: 224 -------

1 2 4

0 6 5

8 3 7

------ Current Step Cost: 7 - Search Cost: 369 - fringes Size: 140 - Explored Size: 225 -------

1 2 4

3 6 0

7 8 5

------ Current Step Cost: 7 - Search Cost: 371 - fringes Size: 141 - Explored Size: 226 -------

6 8 2

1 7 0

3 5 4

------ Current Step Cost: 7 - Search Cost: 373 - fringes Size: 142 - Explored Size: 227 -------

0 2 4

1 6 5

8 3 7

------ Current Step Cost: 8 - Search Cost: 375 - fringes Size: 143 - Explored Size: 228 -------

1 2 4

3 6 5

7 8 0

------ Current Step Cost: 8 - Search Cost: 376 - fringes Size: 143 - Explored Size: 229 -------

6 2 0

1 7 4

8 3 5

------ Current Step Cost: 6 - Search Cost: 377 - fringes Size: 143 - Explored Size: 230 -------

8 2 4

6 1 0

3 7 5

------ Current Step Cost: 7 - Search Cost: 378 - fringes Size: 143 - Explored Size: 231 -------

1 2 4

3 6 5

7 0 8

------ Current Step Cost: 9 - Search Cost: 380 - fringes Size: 144 - Explored Size: 232 -------

1 6 2

0 3 5

7 4 8

------ Current Step Cost: 9 - Search Cost: 382 - fringes Size: 145 - Explored Size: 233 -------

8 2 4

6 1 5

3 7 0

------ Current Step Cost: 8 - Search Cost: 384 - fringes Size: 146 - Explored Size: 234 -------

1 2 4

3 6 5

0 7 8

------ Current Step Cost: 10 - Search Cost: 385 - fringes Size: 146 - Explored Size: 235 -------

0 6 2

1 3 5

7 4 8

------ Current Step Cost: 10 - Search Cost: 386 - fringes Size: 146 - Explored Size: 236 -------

1 6 2

3 5 8

7 4 0

------ Current Step Cost: 8 - Search Cost: 387 - fringes Size: 146 - Explored Size: 237 -------

6 0 2

1 4 5

3 7 8

------ Current Step Cost: 11 - Search Cost: 388 - fringes Size: 146 - Explored Size: 238 -------

6 7 2

1 3 4

8 0 5

------ Current Step Cost: 7 - Search Cost: 390 - fringes Size: 147 - Explored Size: 239 -------

1 6 2

3 5 0

7 4 8

------ Current Step Cost: 9 - Search Cost: 392 - fringes Size: 148 - Explored Size: 240 -------

6 7 2

0 1 4

8 3 5

------ Current Step Cost: 7 - Search Cost: 393 - fringes Size: 148 - Explored Size: 241 -------

8 1 6

3 4 0

7 5 2

------ Current Step Cost: 9 - Search Cost: 395 - fringes Size: 149 - Explored Size: 242 -------

1 7 6

8 0 2

3 5 4

------ Current Step Cost: 6 - Search Cost: 397 - fringes Size: 150 - Explored Size: 243 -------

0 7 2

6 1 4

8 3 5

------ Current Step Cost: 8 - Search Cost: 400 - fringes Size: 152 - Explored Size: 244 -------

6 0 4

1 2 8

3 7 5

------ Current Step Cost: 7 - Search Cost: 401 - fringes Size: 152 - Explored Size: 245 -------

1 2 4

3 8 6

7 0 5

------ Current Step Cost: 7 - Search Cost: 403 - fringes Size: 153 - Explored Size: 246 -------

1 0 2

3 6 5

4 8 7

------ Current Step Cost: 9 - Search Cost: 405 - fringes Size: 154 - Explored Size: 247 -------

0 1 2

3 6 5

4 8 7

------ Current Step Cost: 10 - Search Cost: 407 - fringes Size: 155 - Explored Size: 248 -------

0 6 4

1 2 8

3 7 5

------ Current Step Cost: 8 - Search Cost: 408 - fringes Size: 155 - Explored Size: 249 -------

1 6 2

0 4 5

7 8 3

------ Current Step Cost: 9 - Search Cost: 409 - fringes Size: 155 - Explored Size: 250 -------

6 8 2

0 4 5

1 3 7

------ Current Step Cost: 9 - Search Cost: 411 - fringes Size: 156 - Explored Size: 251 -------

0 6 2

1 4 5

7 8 3

------ Current Step Cost: 10 - Search Cost: 413 - fringes Size: 157 - Explored Size: 252 -------

0 8 2

6 4 5

1 3 7

------ Current Step Cost: 10 - Search Cost: 414 - fringes Size: 157 - Explored Size: 253 -------

1 6 2

3 8 7

5 4 0

------ Current Step Cost: 8 - Search Cost: 415 - fringes Size: 157 - Explored Size: 254 -------

8 1 0

4 2 6

3 7 5

------ Current Step Cost: 8 - Search Cost: 416 - fringes Size: 157 - Explored Size: 255 -------

8 1 2

3 5 6

7 0 4

------ Current Step Cost: 9 - Search Cost: 417 - fringes Size: 157 - Explored Size: 256 -------

8 1 2

3 0 5

4 6 7

------ Current Step Cost: 10 - Search Cost: 419 - fringes Size: 158 - Explored Size: 257 -------

8 1 2

3 5 6

0 7 4

------ Current Step Cost: 10 - Search Cost: 422 - fringes Size: 160 - Explored Size: 258 -------

8 1 2

6 0 7

3 5 4

------ Current Step Cost: 8 - Search Cost: 423 - fringes Size: 160 - Explored Size: 259 -------

8 1 2

7 3 4

6 0 5

------ Current Step Cost: 9 - Search Cost: 425 - fringes Size: 161 - Explored Size: 259 -------

1 4 6

8 7 2

3 5 0

------ Current Step Cost: 6 - Search Cost: 426 - fringes Size: 161 - Explored Size: 260 -------

6 8 2

3 1 4

7 5 0

------ Current Step Cost: 8 - Search Cost: 427 - fringes Size: 161 - Explored Size: 261 -------

6 8 2

3 0 4

7 1 5

------ Current Step Cost: 8 - Search Cost: 428 - fringes Size: 161 - Explored Size: 262 -------

7 1 2

8 6 4

0 3 5

------ Current Step Cost: 8 - Search Cost: 431 - fringes Size: 163 - Explored Size: 263 -------

6 8 2

3 4 0

7 1 5

------ Current Step Cost: 9 - Search Cost: 432 - fringes Size: 163 - Explored Size: 264 -------

6 8 2

1 0 5

3 4 7

------ Current Step Cost: 8 - Search Cost: 434 - fringes Size: 164 - Explored Size: 265 -------

6 8 2

3 4 5

7 1 0

------ Current Step Cost: 10 - Search Cost: 436 - fringes Size: 165 - Explored Size: 266 -------

8 1 2

3 6 7

5 0 4

------ Current Step Cost: 9 - Search Cost: 437 - fringes Size: 165 - Explored Size: 267 -------

1 4 6

8 7 2

0 3 5

------ Current Step Cost: 6 - Search Cost: 439 - fringes Size: 166 - Explored Size: 268 -------

7 1 2

6 0 4

8 3 5

------ Current Step Cost: 8 - Search Cost: 440 - fringes Size: 166 - Explored Size: 269 -------

6 0 2

1 3 4

7 8 5

------ Current Step Cost: 7 - Search Cost: 443 - fringes Size: 168 - Explored Size: 270 -------

7 1 2

6 4 0

8 3 5

------ Current Step Cost: 9 - Search Cost: 445 - fringes Size: 169 - Explored Size: 271 -------

1 6 2

4 3 5

0 8 7

------ Current Step Cost: 8 - Search Cost: 447 - fringes Size: 170 - Explored Size: 272 -------

7 1 2

6 4 5

8 3 0

------ Current Step Cost: 10 - Search Cost: 448 - fringes Size: 170 - Explored Size: 273 -------

3 1 2

7 6 4

0 8 5

------ Current Step Cost: 8 - Search Cost: 449 - fringes Size: 170 - Explored Size: 274 -------

8 1 2

6 0 7

3 5 4

------ Current Step Cost: 8 - Search Cost: 450 - fringes Size: 170 - Explored Size: 274 -------

4 1 2

0 6 5

8 3 7

------ Current Step Cost: 9 - Search Cost: 452 - fringes Size: 171 - Explored Size: 275 -------

6 8 2

1 0 5

3 4 7

------ Current Step Cost: 8 - Search Cost: 454 - fringes Size: 172 - Explored Size: 275 -------

1 0 4

8 2 5

3 6 7

------ Current Step Cost: 7 - Search Cost: 456 - fringes Size: 173 - Explored Size: 276 -------

0 1 4

8 2 5

3 6 7

------ Current Step Cost: 8 - Search Cost: 458 - fringes Size: 174 - Explored Size: 277 -------

1 2 4

0 8 5

3 6 7

------ Current Step Cost: 7 - Search Cost: 459 - fringes Size: 174 - Explored Size: 278 -------

8 1 6

3 0 2

7 4 5

------ Current Step Cost: 8 - Search Cost: 461 - fringes Size: 175 - Explored Size: 279 -------

0 2 4

1 8 5

3 6 7

------ Current Step Cost: 8 - Search Cost: 464 - fringes Size: 177 - Explored Size: 280 -------

1 2 4

3 8 5

0 6 7

------ Current Step Cost: 8 - Search Cost: 465 - fringes Size: 177 - Explored Size: 281 -------

1 6 2

3 0 7

5 8 4

------ Current Step Cost: 8 - Search Cost: 466 - fringes Size: 177 - Explored Size: 282 -------

1 2 4

3 8 5

6 0 7

------ Current Step Cost: 9 - Search Cost: 469 - fringes Size: 179 - Explored Size: 283 -------

1 6 2

3 8 0

4 7 5

------ Current Step Cost: 9 - Search Cost: 471 - fringes Size: 180 - Explored Size: 284 -------

1 2 4

3 8 5

6 7 0

------ Current Step Cost: 10 - Search Cost: 473 - fringes Size: 181 - Explored Size: 285 -------

1 6 2

4 5 0

8 3 7

------ Current Step Cost: 7 - Search Cost: 474 - fringes Size: 181 - Explored Size: 286 -------

8 0 6

4 1 2

3 7 5

------ Current Step Cost: 7 - Search Cost: 476 - fringes Size: 182 - Explored Size: 287 -------

0 8 2

6 7 4

1 3 5

------ Current Step Cost: 8 - Search Cost: 478 - fringes Size: 183 - Explored Size: 288 -------

0 8 6

4 1 2

3 7 5

------ Current Step Cost: 8 - Search Cost: 479 - fringes Size: 183 - Explored Size: 289 -------

3 1 2

6 0 4

7 8 5

------ Current Step Cost: 8 - Search Cost: 480 - fringes Size: 183 - Explored Size: 290 -------

6 0 2

1 8 7

3 5 4

------ Current Step Cost: 7 - Search Cost: 483 - fringes Size: 185 - Explored Size: 291 -------

3 1 2

6 4 0

7 8 5

------ Current Step Cost: 9 - Search Cost: 485 - fringes Size: 186 - Explored Size: 292 -------

8 1 6

4 7 2

3 0 5

------ Current Step Cost: 7 - Search Cost: 487 - fringes Size: 187 - Explored Size: 293 -------

3 1 2

6 4 5

7 8 0

------ Current Step Cost: 10 - Search Cost: 489 - fringes Size: 188 - Explored Size: 294 -------

0 1 2

8 4 5

3 7 6

------ Current Step Cost: 12 - Search Cost: 490 - fringes Size: 188 - Explored Size: 295 -------

3 1 2

6 4 5

7 0 8

------ Current Step Cost: 11 - Search Cost: 491 - fringes Size: 188 - Explored Size: 296 -------

1 4 6

8 2 5

3 0 7

------ Current Step Cost: 7 - Search Cost: 493 - fringes Size: 189 - Explored Size: 297 -------

3 1 2

6 4 5

0 7 8

------ Current Step Cost: 12 - Search Cost: 495 - fringes Size: 190 - Explored Size: 298 -------

8 1 2

7 4 5

6 0 3

------ Current Step Cost: 11 - Search Cost: 496 - fringes Size: 190 - Explored Size: 299 -------

3 1 2

0 4 5

6 7 8

------ Current Step Cost: 13 - Search Cost: 498 - fringes Size: 191 - Explored Size: 300 -------

0 1 2

3 4 5

6 7 8

------ Current Step Cost: 14 - Search Cost: 500 - fringes Size: 192 - Explored Size: 301 -------

----------- GOAL FOUND AT SEARCH COST OF 500------------

--------------- FINISHED H1, STARTING H2 -------------------

1 6 2

8 0 4

3 7 5

------ Current Step Cost: 0 - Search Cost: 0 - fringes Size: 0 - Explored Size: 1 -------

1 0 2

8 6 4

3 7 5

------ Current Step Cost: 1 - Search Cost: 4 - fringes Size: 3 - Explored Size: 2 -------

1 6 2

8 4 0

3 7 5

------ Current Step Cost: 1 - Search Cost: 6 - fringes Size: 4 - Explored Size: 3 -------

0 1 2

8 6 4

3 7 5

------ Current Step Cost: 2 - Search Cost: 8 - fringes Size: 5 - Explored Size: 4 -------

1 6 2

8 4 5

3 7 0

------ Current Step Cost: 2 - Search Cost: 9 - fringes Size: 5 - Explored Size: 5 -------

1 6 2

0 8 4

3 7 5

------ Current Step Cost: 1 - Search Cost: 10 - fringes Size: 5 - Explored Size: 6 -------

1 6 2

3 8 4

0 7 5

------ Current Step Cost: 2 - Search Cost: 12 - fringes Size: 6 - Explored Size: 7 -------

8 1 2

0 6 4

3 7 5

------ Current Step Cost: 3 - Search Cost: 13 - fringes Size: 6 - Explored Size: 8 -------

1 6 2

3 8 4

7 0 5

------ Current Step Cost: 3 - Search Cost: 15 - fringes Size: 7 - Explored Size: 9 -------

8 1 2

6 0 4

3 7 5

------ Current Step Cost: 4 - Search Cost: 17 - fringes Size: 8 - Explored Size: 10 -------

1 2 0

8 6 4

3 7 5

------ Current Step Cost: 2 - Search Cost: 20 - fringes Size: 10 - Explored Size: 11 -------

8 1 2

6 4 0

3 7 5

------ Current Step Cost: 5 - Search Cost: 21 - fringes Size: 10 - Explored Size: 12 -------

1 6 2

8 7 4

3 0 5

------ Current Step Cost: 1 - Search Cost: 23 - fringes Size: 11 - Explored Size: 13 -------

8 1 2

6 4 5

3 7 0

------ Current Step Cost: 6 - Search Cost: 25 - fringes Size: 12 - Explored Size: 14 -------

1 6 2

3 0 4

7 8 5

------ Current Step Cost: 4 - Search Cost: 26 - fringes Size: 12 - Explored Size: 15 -------

1 6 0

8 4 2

3 7 5

------ Current Step Cost: 2 - Search Cost: 29 - fringes Size: 14 - Explored Size: 16 -------

1 6 2

3 4 0

7 8 5

------ Current Step Cost: 5 - Search Cost: 30 - fringes Size: 14 - Explored Size: 17 -------

1 6 2

8 4 5

3 0 7

------ Current Step Cost: 3 - Search Cost: 32 - fringes Size: 15 - Explored Size: 18 -------

1 6 2

3 4 5

7 8 0

------ Current Step Cost: 6 - Search Cost: 34 - fringes Size: 16 - Explored Size: 19 -------

0 6 2

1 8 4

3 7 5

------ Current Step Cost: 2 - Search Cost: 35 - fringes Size: 16 - Explored Size: 20 -------

1 6 2

3 4 5

7 0 8

------ Current Step Cost: 7 - Search Cost: 36 - fringes Size: 16 - Explored Size: 21 -------

6 0 2

1 8 4

3 7 5

------ Current Step Cost: 3 - Search Cost: 38 - fringes Size: 17 - Explored Size: 22 -------

1 6 2

3 4 5

0 7 8

------ Current Step Cost: 8 - Search Cost: 40 - fringes Size: 18 - Explored Size: 23 -------

1 0 2

3 6 4

7 8 5

------ Current Step Cost: 5 - Search Cost: 41 - fringes Size: 18 - Explored Size: 24 -------

8 1 2

3 6 4

0 7 5

------ Current Step Cost: 4 - Search Cost: 43 - fringes Size: 19 - Explored Size: 25 -------

0 1 2

3 6 4

7 8 5

------ Current Step Cost: 6 - Search Cost: 44 - fringes Size: 19 - Explored Size: 26 -------

8 1 2

3 6 4

7 0 5

------ Current Step Cost: 5 - Search Cost: 45 - fringes Size: 19 - Explored Size: 27 -------

3 1 2

0 6 4

7 8 5

------ Current Step Cost: 7 - Search Cost: 47 - fringes Size: 20 - Explored Size: 28 -------

1 2 0

3 6 4

7 8 5

------ Current Step Cost: 6 - Search Cost: 49 - fringes Size: 21 - Explored Size: 29 -------

3 1 2

6 0 4

7 8 5

------ Current Step Cost: 8 - Search Cost: 50 - fringes Size: 21 - Explored Size: 30 -------

8 0 2

6 1 4

3 7 5

------ Current Step Cost: 5 - Search Cost: 53 - fringes Size: 23 - Explored Size: 31 -------

3 1 2

6 4 0

7 8 5

------ Current Step Cost: 9 - Search Cost: 55 - fringes Size: 24 - Explored Size: 32 -------

1 6 2

3 8 4

7 5 0

------ Current Step Cost: 4 - Search Cost: 57 - fringes Size: 25 - Explored Size: 33 -------

3 1 2

6 4 5

7 8 0

------ Current Step Cost: 10 - Search Cost: 58 - fringes Size: 25 - Explored Size: 34 -------

1 6 2

8 0 5

3 4 7

------ Current Step Cost: 4 - Search Cost: 59 - fringes Size: 25 - Explored Size: 35 -------

3 1 2

6 4 5

7 0 8

------ Current Step Cost: 11 - Search Cost: 62 - fringes Size: 27 - Explored Size: 36 -------

1 6 2

3 0 5

7 4 8

------ Current Step Cost: 8 - Search Cost: 64 - fringes Size: 28 - Explored Size: 37 -------

3 1 2

6 4 5

0 7 8

------ Current Step Cost: 12 - Search Cost: 67 - fringes Size: 30 - Explored Size: 38 -------

8 1 2

6 4 5

3 0 7

------ Current Step Cost: 7 - Search Cost: 68 - fringes Size: 30 - Explored Size: 39 -------

3 1 2

0 4 5

6 7 8

------ Current Step Cost: 13 - Search Cost: 70 - fringes Size: 31 - Explored Size: 40 -------

6 8 2

1 0 4

3 7 5

------ Current Step Cost: 4 - Search Cost: 72 - fringes Size: 32 - Explored Size: 41 -------

1 2 4

8 6 0

3 7 5

------ Current Step Cost: 3 - Search Cost: 75 - fringes Size: 34 - Explored Size: 42 -------

0 1 2

3 4 5

6 7 8

------ Current Step Cost: 14 - Search Cost: 77 - fringes Size: 35 - Explored Size: 43 -------

----------- GOAL FOUND AT SEARCH COST OF 77------------

--------------- FINISHED H2 -------------------

Solved With H1

Depth: 14 - Search Cost: 499 - Fringe Size: 191 - Explored Set Size: 300 - Total Time: 45 ms

Solved Using H2

Depth: 14 - Search Cost: 71 - Fringe Size: 31 - Explored Set Size: 40 - Total Time: 2 ms

d | Total Cases | Search Cost H1 | Total Time H1 | Search Cost H2 | Total Time H2

14 | 1 | 499 | 45 | 71 | 2

8-Puzzle Problem

Please select an option:

1) Random Puzzle

2) User-Defined Puzzle

3) Exit

2

Enter a new puzzle:

1 5 8 6 3 4 0 7 2

Empty Pos: 6

1 5 8

6 3 4

0 7 2

---------- STARTING TO SOLVE PUZZLE USING H1 --------

1 5 8

6 3 4

0 7 2

------ Current Step Cost: 0 - Search Cost: 0 - fringes Size: 0 - Explored Size: 1 -------

1 5 8

0 3 4

6 7 2

------ Current Step Cost: 1 - Search Cost: 2 - fringes Size: 1 - Explored Size: 2 -------

0 5 8

1 3 4

6 7 2

------ Current Step Cost: 2 - Search Cost: 4 - fringes Size: 2 - Explored Size: 3 -------

1 5 8

3 0 4

6 7 2

------ Current Step Cost: 2 - Search Cost: 5 - fringes Size: 2 - Explored Size: 4 -------

1 5 8

3 4 0

6 7 2

------ Current Step Cost: 3 - Search Cost: 8 - fringes Size: 4 - Explored Size: 5 -------

1 0 8

3 5 4

6 7 2

------ Current Step Cost: 3 - Search Cost: 10 - fringes Size: 5 - Explored Size: 6 -------

0 1 8

3 5 4

6 7 2

------ Current Step Cost: 4 - Search Cost: 12 - fringes Size: 6 - Explored Size: 7 -------

1 5 0

3 4 8

6 7 2

------ Current Step Cost: 4 - Search Cost: 13 - fringes Size: 6 - Explored Size: 8 -------

1 5 8

3 4 2

6 7 0

------ Current Step Cost: 4 - Search Cost: 14 - fringes Size: 6 - Explored Size: 9 -------

1 0 5

3 4 8

6 7 2

------ Current Step Cost: 5 - Search Cost: 15 - fringes Size: 6 - Explored Size: 10 -------

0 1 5

3 4 8

6 7 2

------ Current Step Cost: 6 - Search Cost: 17 - fringes Size: 7 - Explored Size: 11 -------

5 0 8

1 3 4

6 7 2

------ Current Step Cost: 3 - Search Cost: 18 - fringes Size: 7 - Explored Size: 12 -------

1 5 8

3 7 4

6 0 2

------ Current Step Cost: 3 - Search Cost: 20 - fringes Size: 8 - Explored Size: 13 -------

1 5 8

6 3 4

7 0 2

------ Current Step Cost: 1 - Search Cost: 22 - fringes Size: 9 - Explored Size: 14 -------

1 8 0

3 5 4

6 7 2

------ Current Step Cost: 4 - Search Cost: 24 - fringes Size: 10 - Explored Size: 15 -------

1 5 8

6 3 4

7 2 0

------ Current Step Cost: 2 - Search Cost: 25 - fringes Size: 10 - Explored Size: 16 -------

1 8 4

3 5 0

6 7 2

------ Current Step Cost: 5 - Search Cost: 26 - fringes Size: 10 - Explored Size: 17 -------

5 8 0

1 3 4

6 7 2

------ Current Step Cost: 4 - Search Cost: 28 - fringes Size: 11 - Explored Size: 18 -------

1 5 8

3 4 2

6 0 7

------ Current Step Cost: 5 - Search Cost: 29 - fringes Size: 11 - Explored Size: 19 -------

5 3 8

1 0 4

6 7 2

------ Current Step Cost: 4 - Search Cost: 31 - fringes Size: 12 - Explored Size: 20 -------

1 5 8

3 7 4

6 2 0

------ Current Step Cost: 4 - Search Cost: 34 - fringes Size: 14 - Explored Size: 21 -------

1 5 8

6 0 4

7 3 2

------ Current Step Cost: 2 - Search Cost: 35 - fringes Size: 14 - Explored Size: 22 -------

3 1 8

0 5 4

6 7 2

------ Current Step Cost: 5 - Search Cost: 38 - fringes Size: 16 - Explored Size: 23 -------

1 5 8

6 4 0

7 3 2

------ Current Step Cost: 3 - Search Cost: 40 - fringes Size: 17 - Explored Size: 24 -------

1 8 4

3 0 5

6 7 2

------ Current Step Cost: 6 - Search Cost: 42 - fringes Size: 18 - Explored Size: 25 -------

5 3 8

1 4 0

6 7 2

------ Current Step Cost: 5 - Search Cost: 45 - fringes Size: 20 - Explored Size: 26 -------

1 5 8

6 3 0

7 2 4

------ Current Step Cost: 3 - Search Cost: 47 - fringes Size: 21 - Explored Size: 27 -------

5 3 8

1 4 2

6 7 0

------ Current Step Cost: 6 - Search Cost: 49 - fringes Size: 22 - Explored Size: 28 -------

1 4 5

3 0 8

6 7 2

------ Current Step Cost: 6 - Search Cost: 50 - fringes Size: 22 - Explored Size: 29 -------

3 1 5

0 4 8

6 7 2

------ Current Step Cost: 7 - Search Cost: 53 - fringes Size: 24 - Explored Size: 30 -------

1 5 8

0 6 4

7 3 2

------ Current Step Cost: 3 - Search Cost: 55 - fringes Size: 25 - Explored Size: 31 -------

1 5 8

3 7 4

0 6 2

------ Current Step Cost: 4 - Search Cost: 57 - fringes Size: 26 - Explored Size: 32 -------

1 5 0

6 4 8

7 3 2

------ Current Step Cost: 4 - Search Cost: 58 - fringes Size: 26 - Explored Size: 33 -------

1 0 4

3 8 5

6 7 2

------ Current Step Cost: 7 - Search Cost: 59 - fringes Size: 26 - Explored Size: 34 -------

0 1 4

3 8 5

6 7 2

------ Current Step Cost: 8 - Search Cost: 61 - fringes Size: 27 - Explored Size: 35 -------

5 3 0

1 4 8

6 7 2

------ Current Step Cost: 6 - Search Cost: 62 - fringes Size: 27 - Explored Size: 36 -------

1 8 4

3 5 2

6 7 0

------ Current Step Cost: 6 - Search Cost: 63 - fringes Size: 27 - Explored Size: 37 -------

5 8 4

1 3 0

6 7 2

------ Current Step Cost: 5 - Search Cost: 64 - fringes Size: 27 - Explored Size: 38 -------

1 5 8

6 4 2

7 3 0

------ Current Step Cost: 4 - Search Cost: 66 - fringes Size: 28 - Explored Size: 39 -------

1 5 8

3 7 0

6 2 4

------ Current Step Cost: 5 - Search Cost: 67 - fringes Size: 28 - Explored Size: 40 -------

0 5 8

1 6 4

7 3 2

------ Current Step Cost: 4 - Search Cost: 69 - fringes Size: 29 - Explored Size: 41 -------

3 1 8

5 0 4

6 7 2

------ Current Step Cost: 6 - Search Cost: 70 - fringes Size: 29 - Explored Size: 42 -------

5 3 8

0 1 4

6 7 2

------ Current Step Cost: 5 - Search Cost: 73 - fringes Size: 31 - Explored Size: 43 -------

3 1 8

5 4 0

6 7 2

------ Current Step Cost: 7 - Search Cost: 75 - fringes Size: 32 - Explored Size: 44 -------

0 3 8

5 1 4

6 7 2

------ Current Step Cost: 6 - Search Cost: 77 - fringes Size: 33 - Explored Size: 45 -------

1 0 8

6 5 4

7 3 2

------ Current Step Cost: 3 - Search Cost: 78 - fringes Size: 33 - Explored Size: 46 -------

0 1 8

6 5 4

7 3 2

------ Current Step Cost: 4 - Search Cost: 80 - fringes Size: 34 - Explored Size: 47 -------

1 8 0

6 5 4

7 3 2

------ Current Step Cost: 4 - Search Cost: 81 - fringes Size: 34 - Explored Size: 48 -------

6 1 8

0 5 4

7 3 2

------ Current Step Cost: 5 - Search Cost: 82 - fringes Size: 34 - Explored Size: 49 -------

1 5 8

7 6 4

0 3 2

------ Current Step Cost: 4 - Search Cost: 84 - fringes Size: 35 - Explored Size: 50 -------

1 5 8

6 0 3

7 2 4

------ Current Step Cost: 4 - Search Cost: 85 - fringes Size: 35 - Explored Size: 51 -------

1 8 4

0 3 5

6 7 2

------ Current Step Cost: 7 - Search Cost: 88 - fringes Size: 37 - Explored Size: 52 -------

3 1 0

5 4 8

6 7 2

------ Current Step Cost: 8 - Search Cost: 90 - fringes Size: 38 - Explored Size: 53 -------

3 1 8

6 5 4

0 7 2

------ Current Step Cost: 6 - Search Cost: 91 - fringes Size: 38 - Explored Size: 54 -------

1 4 5

3 8 0

6 7 2

------ Current Step Cost: 7 - Search Cost: 92 - fringes Size: 38 - Explored Size: 55 -------

0 8 4

1 3 5

6 7 2

------ Current Step Cost: 8 - Search Cost: 94 - fringes Size: 39 - Explored Size: 56 -------

1 4 0

3 8 5

6 7 2

------ Current Step Cost: 8 - Search Cost: 95 - fringes Size: 39 - Explored Size: 57 -------

1 4 0

3 8 5

6 7 2

------ Current Step Cost: 8 - Search Cost: 95 - fringes Size: 38 - Explored Size: 57 -------

1 8 4

3 7 5

6 0 2

------ Current Step Cost: 7 - Search Cost: 95 - fringes Size: 37 - Explored Size: 58 -------

1 5 8

3 4 2

0 6 7

------ Current Step Cost: 6 - Search Cost: 97 - fringes Size: 38 - Explored Size: 59 -------

1 0 5

6 4 8

7 3 2

------ Current Step Cost: 5 - Search Cost: 98 - fringes Size: 38 - Explored Size: 60 -------

0 1 5

6 4 8

7 3 2

------ Current Step Cost: 6 - Search Cost: 100 - fringes Size: 39 - Explored Size: 61 -------

1 5 0

6 3 8

7 2 4

------ Current Step Cost: 4 - Search Cost: 101 - fringes Size: 39 - Explored Size: 62 -------

3 1 8

5 4 2

6 7 0

------ Current Step Cost: 8 - Search Cost: 102 - fringes Size: 39 - Explored Size: 63 -------

5 8 4

1 0 3

6 7 2

------ Current Step Cost: 6 - Search Cost: 103 - fringes Size: 39 - Explored Size: 64 -------

1 5 8

3 0 2

6 4 7

------ Current Step Cost: 6 - Search Cost: 106 - fringes Size: 41 - Explored Size: 65 -------

5 3 8

1 7 4

6 0 2

------ Current Step Cost: 5 - Search Cost: 109 - fringes Size: 43 - Explored Size: 66 -------

5 0 3

1 4 8

6 7 2

------ Current Step Cost: 7 - Search Cost: 111 - fringes Size: 44 - Explored Size: 67 -------

1 5 8

6 4 2

7 0 3

------ Current Step Cost: 5 - Search Cost: 113 - fringes Size: 45 - Explored Size: 68 -------

0 5 3

1 4 8

6 7 2

------ Current Step Cost: 8 - Search Cost: 115 - fringes Size: 46 - Explored Size: 69 -------

1 5 8

6 4 2

0 7 3

------ Current Step Cost: 6 - Search Cost: 116 - fringes Size: 46 - Explored Size: 70 -------

5 8 4

1 3 2

6 7 0

------ Current Step Cost: 6 - Search Cost: 117 - fringes Size: 46 - Explored Size: 71 -------

1 5 8

0 4 2

6 7 3

------ Current Step Cost: 7 - Search Cost: 118 - fringes Size: 46 - Explored Size: 72 -------

1 5 0

3 7 8

6 2 4

------ Current Step Cost: 6 - Search Cost: 120 - fringes Size: 47 - Explored Size: 73 -------

0 5 8

1 4 2

6 7 3

------ Current Step Cost: 8 - Search Cost: 121 - fringes Size: 47 - Explored Size: 74 -------

1 5 8

3 0 7

6 2 4

------ Current Step Cost: 6 - Search Cost: 122 - fringes Size: 47 - Explored Size: 75 -------

3 1 4

0 8 5

6 7 2

------ Current Step Cost: 9 - Search Cost: 125 - fringes Size: 49 - Explored Size: 76 -------

5 3 8

6 1 4

0 7 2

------ Current Step Cost: 6 - Search Cost: 127 - fringes Size: 50 - Explored Size: 77 -------

6 1 8

5 0 4

7 3 2

------ Current Step Cost: 6 - Search Cost: 128 - fringes Size: 50 - Explored Size: 78 -------

1 8 4

6 5 0

7 3 2

------ Current Step Cost: 5 - Search Cost: 131 - fringes Size: 52 - Explored Size: 79 -------

6 1 8

7 5 4

0 3 2

------ Current Step Cost: 6 - Search Cost: 133 - fringes Size: 53 - Explored Size: 80 -------

1 8 4

6 0 5

7 3 2

------ Current Step Cost: 6 - Search Cost: 134 - fringes Size: 53 - Explored Size: 81 -------

1 5 8

7 6 4

3 0 2

------ Current Step Cost: 5 - Search Cost: 137 - fringes Size: 55 - Explored Size: 82 -------

1 0 8

6 5 3

7 2 4

------ Current Step Cost: 5 - Search Cost: 139 - fringes Size: 56 - Explored Size: 83 -------

0 1 8

6 5 3

7 2 4

------ Current Step Cost: 6 - Search Cost: 141 - fringes Size: 57 - Explored Size: 84 -------

5 3 8

1 4 2

6 0 7

------ Current Step Cost: 7 - Search Cost: 142 - fringes Size: 57 - Explored Size: 85 -------

1 4 5

3 8 2

6 7 0

------ Current Step Cost: 8 - Search Cost: 144 - fringes Size: 58 - Explored Size: 86 -------

1 8 4

3 7 5

6 2 0

------ Current Step Cost: 8 - Search Cost: 145 - fringes Size: 58 - Explored Size: 87 -------

1 5 8

0 7 4

3 6 2

------ Current Step Cost: 5 - Search Cost: 146 - fringes Size: 58 - Explored Size: 88 -------

5 0 4

1 8 3

6 7 2

------ Current Step Cost: 7 - Search Cost: 148 - fringes Size: 59 - Explored Size: 89 -------

5 8 4

0 1 3

6 7 2

------ Current Step Cost: 7 - Search Cost: 150 - fringes Size: 60 - Explored Size: 90 -------

1 0 8

3 5 2

6 4 7

------ Current Step Cost: 7 - Search Cost: 152 - fringes Size: 61 - Explored Size: 91 -------

0 1 8

3 5 2

6 4 7

------ Current Step Cost: 8 - Search Cost: 154 - fringes Size: 62 - Explored Size: 92 -------

1 5 8

0 6 3

7 2 4

------ Current Step Cost: 5 - Search Cost: 155 - fringes Size: 62 - Explored Size: 93 -------

1 4 5

3 7 8

6 0 2

------ Current Step Cost: 7 - Search Cost: 157 - fringes Size: 63 - Explored Size: 94 -------

3 0 8

5 1 4

6 7 2

------ Current Step Cost: 7 - Search Cost: 159 - fringes Size: 64 - Explored Size: 95 -------

3 1 5

4 0 8

6 7 2

------ Current Step Cost: 8 - Search Cost: 160 - fringes Size: 64 - Explored Size: 96 -------

1 4 5

0 3 8

6 7 2

------ Current Step Cost: 7 - Search Cost: 163 - fringes Size: 66 - Explored Size: 97 -------

1 0 5

3 7 8

6 2 4

------ Current Step Cost: 7 - Search Cost: 165 - fringes Size: 67 - Explored Size: 98 -------

0 1 5

3 7 8

6 2 4

------ Current Step Cost: 8 - Search Cost: 167 - fringes Size: 68 - Explored Size: 99 -------

0 4 5

1 3 8

6 7 2

------ Current Step Cost: 8 - Search Cost: 168 - fringes Size: 68 - Explored Size: 100 -------

1 0 8

3 5 7

6 2 4

------ Current Step Cost: 7 - Search Cost: 169 - fringes Size: 68 - Explored Size: 101 -------

0 1 8

3 5 7

6 2 4

------ Current Step Cost: 8 - Search Cost: 171 - fringes Size: 69 - Explored Size: 102 -------

1 5 8

3 2 7

6 0 4

------ Current Step Cost: 7 - Search Cost: 172 - fringes Size: 69 - Explored Size: 103 -------

3 1 5

6 4 8

0 7 2

------ Current Step Cost: 8 - Search Cost: 174 - fringes Size: 70 - Explored Size: 104 -------

1 8 4

3 5 2

6 0 7

------ Current Step Cost: 7 - Search Cost: 175 - fringes Size: 70 - Explored Size: 105 -------

6 1 8

5 4 0

7 3 2

------ Current Step Cost: 7 - Search Cost: 177 - fringes Size: 71 - Explored Size: 106 -------

1 0 5

6 3 8

7 2 4

------ Current Step Cost: 5 - Search Cost: 179 - fringes Size: 72 - Explored Size: 107 -------

0 1 5

6 3 8

7 2 4

------ Current Step Cost: 6 - Search Cost: 181 - fringes Size: 73 - Explored Size: 108 -------

1 5 8

6 2 3

7 0 4

------ Current Step Cost: 5 - Search Cost: 182 - fringes Size: 73 - Explored Size: 109 -------

5 3 8

1 7 4

6 2 0

------ Current Step Cost: 6 - Search Cost: 184 - fringes Size: 74 - Explored Size: 110 -------

1 5 8

6 2 3

0 7 4

------ Current Step Cost: 6 - Search Cost: 185 - fringes Size: 74 - Explored Size: 111 -------

5 0 8

1 6 4

7 3 2

------ Current Step Cost: 5 - Search Cost: 186 - fringes Size: 74 - Explored Size: 112 -------

1 5 8

0 2 3

6 7 4

------ Current Step Cost: 7 - Search Cost: 188 - fringes Size: 75 - Explored Size: 113 -------

1 5 8

3 2 0

6 4 7

------ Current Step Cost: 7 - Search Cost: 190 - fringes Size: 76 - Explored Size: 114 -------

0 5 8

1 2 3

6 7 4

------ Current Step Cost: 8 - Search Cost: 192 - fringes Size: 77 - Explored Size: 115 -------

0 5 8

1 7 4

3 6 2

------ Current Step Cost: 6 - Search Cost: 193 - fringes Size: 77 - Explored Size: 116 -------

6 1 5

0 4 8

7 3 2

------ Current Step Cost: 7 - Search Cost: 194 - fringes Size: 77 - Explored Size: 117 -------

0 5 4

1 8 3

6 7 2

------ Current Step Cost: 8 - Search Cost: 196 - fringes Size: 78 - Explored Size: 118 -------

0 8 4

5 1 3

6 7 2

------ Current Step Cost: 8 - Search Cost: 197 - fringes Size: 78 - Explored Size: 119 -------

3 0 8

5 1 4

6 7 2

------ Current Step Cost: 7 - Search Cost: 198 - fringes Size: 78 - Explored Size: 119 -------

3 1 8

5 7 4

6 0 2

------ Current Step Cost: 7 - Search Cost: 199 - fringes Size: 78 - Explored Size: 120 -------

0 5 8

1 6 3

7 2 4

------ Current Step Cost: 6 - Search Cost: 201 - fringes Size: 79 - Explored Size: 121 -------

1 5 8

2 0 3

6 7 4

------ Current Step Cost: 8 - Search Cost: 202 - fringes Size: 79 - Explored Size: 122 -------

1 8 4

0 6 5

7 3 2

------ Current Step Cost: 7 - Search Cost: 205 - fringes Size: 81 - Explored Size: 123 -------

3 0 1

5 4 8

6 7 2

------ Current Step Cost: 9 - Search Cost: 207 - fringes Size: 82 - Explored Size: 124 -------

8 0 4

1 3 5

6 7 2

------ Current Step Cost: 9 - Search Cost: 209 - fringes Size: 83 - Explored Size: 125 -------

1 5 8

0 4 2

3 6 7

------ Current Step Cost: 7 - Search Cost: 211 - fringes Size: 84 - Explored Size: 126 -------

1 5 8

7 6 4

3 2 0

------ Current Step Cost: 6 - Search Cost: 213 - fringes Size: 85 - Explored Size: 127 -------

3 1 4

8 0 5

6 7 2

------ Current Step Cost: 10 - Search Cost: 214 - fringes Size: 85 - Explored Size: 128 -------

1 7 5

3 0 8

6 2 4

------ Current Step Cost: 8 - Search Cost: 217 - fringes Size: 87 - Explored Size: 129 -------

1 5 8

0 3 7

6 2 4

------ Current Step Cost: 7 - Search Cost: 220 - fringes Size: 89 - Explored Size: 130 -------

5 0 8

1 4 2

6 7 3

------ Current Step Cost: 9 - Search Cost: 222 - fringes Size: 90 - Explored Size: 131 -------

1 8 4

3 0 2

6 5 7

------ Current Step Cost: 8 - Search Cost: 224 - fringes Size: 91 - Explored Size: 132 -------

1 5 8

6 2 3

7 4 0

------ Current Step Cost: 6 - Search Cost: 227 - fringes Size: 93 - Explored Size: 133 -------

1 5 8

7 6 3

0 2 4

------ Current Step Cost: 6 - Search Cost: 228 - fringes Size: 93 - Explored Size: 134 -------

1 8 4

6 3 5

0 7 2

------ Current Step Cost: 8 - Search Cost: 229 - fringes Size: 93 - Explored Size: 135 -------

6 1 0

5 4 8

7 3 2

------ Current Step Cost: 8 - Search Cost: 230 - fringes Size: 93 - Explored Size: 136 -------

1 3 5

6 0 8

7 2 4

------ Current Step Cost: 6 - Search Cost: 231 - fringes Size: 93 - Explored Size: 137 -------

1 5 8

4 0 2

6 7 3

------ Current Step Cost: 8 - Search Cost: 234 - fringes Size: 95 - Explored Size: 138 -------

3 1 8

5 4 2

6 0 7

------ Current Step Cost: 9 - Search Cost: 237 - fringes Size: 97 - Explored Size: 139 -------

5 6 8

1 0 4

7 3 2

------ Current Step Cost: 6 - Search Cost: 239 - fringes Size: 98 - Explored Size: 140 -------

1 8 0

3 5 7

6 2 4

------ Current Step Cost: 8 - Search Cost: 242 - fringes Size: 100 - Explored Size: 141 -------

6 1 8

7 5 4

3 0 2

------ Current Step Cost: 7 - Search Cost: 243 - fringes Size: 100 - Explored Size: 142 -------

1 8 4

3 7 5

0 6 2

------ Current Step Cost: 8 - Search Cost: 245 - fringes Size: 101 - Explored Size: 143 -------

1 5 0

3 2 8

6 4 7

------ Current Step Cost: 8 - Search Cost: 246 - fringes Size: 101 - Explored Size: 144 -------

1 4 5

6 0 8

7 3 2

------ Current Step Cost: 6 - Search Cost: 247 - fringes Size: 101 - Explored Size: 145 -------

6 1 5

7 4 8

0 3 2

------ Current Step Cost: 8 - Search Cost: 250 - fringes Size: 103 - Explored Size: 146 -------

6 1 8

0 5 3

7 2 4

------ Current Step Cost: 7 - Search Cost: 251 - fringes Size: 103 - Explored Size: 147 -------

1 8 0

6 5 3

7 2 4

------ Current Step Cost: 6 - Search Cost: 253 - fringes Size: 104 - Explored Size: 148 -------

5 8 4

1 7 3

6 0 2

------ Current Step Cost: 7 - Search Cost: 254 - fringes Size: 104 - Explored Size: 149 -------

3 1 8

5 7 4

6 2 0

------ Current Step Cost: 8 - Search Cost: 256 - fringes Size: 105 - Explored Size: 150 -------

0 8 4

1 6 5

7 3 2

------ Current Step Cost: 8 - Search Cost: 257 - fringes Size: 105 - Explored Size: 151 -------

1 5 8

0 3 2

6 4 7

------ Current Step Cost: 7 - Search Cost: 258 - fringes Size: 105 - Explored Size: 152 -------

0 3 1

5 4 8

6 7 2

------ Current Step Cost: 10 - Search Cost: 260 - fringes Size: 106 - Explored Size: 153 -------

0 5 8

1 4 2

3 6 7

------ Current Step Cost: 8 - Search Cost: 261 - fringes Size: 106 - Explored Size: 154 -------

1 8 0

3 5 2

6 4 7

------ Current Step Cost: 8 - Search Cost: 262 - fringes Size: 106 - Explored Size: 155 -------

1 5 8

7 0 4

3 6 2

------ Current Step Cost: 6 - Search Cost: 263 - fringes Size: 106 - Explored Size: 156 -------

1 8 2

3 5 0

6 4 7

------ Current Step Cost: 9 - Search Cost: 265 - fringes Size: 107 - Explored Size: 157 -------

5 3 8

1 7 4

0 6 2

------ Current Step Cost: 6 - Search Cost: 267 - fringes Size: 108 - Explored Size: 158 -------

1 8 2

3 0 5

6 4 7

------ Current Step Cost: 10 - Search Cost: 268 - fringes Size: 108 - Explored Size: 159 -------

5 4 3

1 0 8

6 7 2

------ Current Step Cost: 8 - Search Cost: 271 - fringes Size: 110 - Explored Size: 160 -------

0 5 8

1 3 7

6 2 4

------ Current Step Cost: 8 - Search Cost: 274 - fringes Size: 112 - Explored Size: 161 -------

1 5 8

6 0 2

7 4 3

------ Current Step Cost: 6 - Search Cost: 275 - fringes Size: 112 - Explored Size: 162 -------

5 4 0

1 8 3

6 7 2

------ Current Step Cost: 8 - Search Cost: 278 - fringes Size: 114 - Explored Size: 163 -------

3 8 0

5 1 4

6 7 2

------ Current Step Cost: 8 - Search Cost: 279 - fringes Size: 114 - Explored Size: 164 -------

3 8 0

5 1 4

6 7 2

------ Current Step Cost: 8 - Search Cost: 280 - fringes Size: 114 - Explored Size: 164 -------

3 1 8

6 5 4

7 0 2

------ Current Step Cost: 7 - Search Cost: 281 - fringes Size: 114 - Explored Size: 165 -------

1 4 5

3 7 8

6 2 0

------ Current Step Cost: 8 - Search Cost: 283 - fringes Size: 115 - Explored Size: 166 -------

3 1 5

4 8 0

6 7 2

------ Current Step Cost: 9 - Search Cost: 284 - fringes Size: 115 - Explored Size: 167 -------

5 6 8

1 4 0

7 3 2

------ Current Step Cost: 7 - Search Cost: 286 - fringes Size: 116 - Explored Size: 168 -------

1 5 8

3 2 7

6 4 0

------ Current Step Cost: 8 - Search Cost: 288 - fringes Size: 117 - Explored Size: 169 -------

6 1 8

5 3 4

7 0 2

------ Current Step Cost: 7 - Search Cost: 288 - fringes Size: 116 - Explored Size: 170 -------

1 8 4

6 5 2

7 3 0

------ Current Step Cost: 6 - Search Cost: 290 - fringes Size: 117 - Explored Size: 171 -------

0 5 8

1 3 2

6 4 7

------ Current Step Cost: 8 - Search Cost: 291 - fringes Size: 117 - Explored Size: 172 -------

1 0 4

6 8 5

7 3 2

------ Current Step Cost: 7 - Search Cost: 292 - fringes Size: 117 - Explored Size: 173 -------

0 1 4

6 8 5

7 3 2

------ Current Step Cost: 8 - Search Cost: 294 - fringes Size: 118 - Explored Size: 174 -------

1 5 8

7 4 0

3 6 2

------ Current Step Cost: 7 - Search Cost: 295 - fringes Size: 118 - Explored Size: 175 -------

1 8 2

3 4 5

6 0 7

------ Current Step Cost: 11 - Search Cost: 297 - fringes Size: 119 - Explored Size: 176 -------

1 8 4

6 3 5

7 0 2

------ Current Step Cost: 7 - Search Cost: 299 - fringes Size: 120 - Explored Size: 177 -------

5 3 8

1 7 0

6 2 4

------ Current Step Cost: 7 - Search Cost: 300 - fringes Size: 120 - Explored Size: 178 -------

5 8 4

1 3 2

6 0 7

------ Current Step Cost: 7 - Search Cost: 302 - fringes Size: 121 - Explored Size: 179 -------

1 5 8

7 0 4

3 6 2

------ Current Step Cost: 6 - Search Cost: 304 - fringes Size: 122 - Explored Size: 179 -------

1 4 5

3 7 0

6 2 8

------ Current Step Cost: 9 - Search Cost: 305 - fringes Size: 122 - Explored Size: 180 -------

3 1 0

4 8 5

6 7 2

------ Current Step Cost: 10 - Search Cost: 307 - fringes Size: 123 - Explored Size: 181 -------

6 1 8

5 3 4

0 7 2

------ Current Step Cost: 8 - Search Cost: 308 - fringes Size: 123 - Explored Size: 182 -------

6 1 5

0 3 8

7 2 4

------ Current Step Cost: 7 - Search Cost: 309 - fringes Size: 123 - Explored Size: 183 -------

6 1 8

5 4 2

7 3 0

------ Current Step Cost: 8 - Search Cost: 311 - fringes Size: 124 - Explored Size: 184 -------

1 5 8

3 2 7

6 4 0

------ Current Step Cost: 8 - Search Cost: 312 - fringes Size: 124 - Explored Size: 184 -------

1 5 3

0 4 8

6 7 2

------ Current Step Cost: 9 - Search Cost: 312 - fringes Size: 123 - Explored Size: 185 -------

1 8 2

3 4 5

6 7 0

------ Current Step Cost: 12 - Search Cost: 314 - fringes Size: 124 - Explored Size: 186 -------

5 8 0

1 6 4

7 3 2

------ Current Step Cost: 6 - Search Cost: 315 - fringes Size: 124 - Explored Size: 187 -------

1 4 0

3 7 5

6 2 8

------ Current Step Cost: 10 - Search Cost: 316 - fringes Size: 124 - Explored Size: 188 -------

6 1 5

3 0 8

7 2 4

------ Current Step Cost: 8 - Search Cost: 317 - fringes Size: 124 - Explored Size: 189 -------

1 0 4

3 7 5

6 2 8

------ Current Step Cost: 11 - Search Cost: 320 - fringes Size: 126 - Explored Size: 190 -------

0 1 4

3 7 5

6 2 8

------ Current Step Cost: 12 - Search Cost: 322 - fringes Size: 127 - Explored Size: 191 -------

6 1 5

3 8 0

7 2 4

------ Current Step Cost: 9 - Search Cost: 323 - fringes Size: 127 - Explored Size: 192 -------

5 0 8

1 6 3

7 2 4

------ Current Step Cost: 7 - Search Cost: 325 - fringes Size: 128 - Explored Size: 193 -------

1 4 5

6 3 8

0 7 2

------ Current Step Cost: 8 - Search Cost: 327 - fringes Size: 129 - Explored Size: 194 -------

1 4 5

3 7 8

0 6 2

------ Current Step Cost: 8 - Search Cost: 328 - fringes Size: 129 - Explored Size: 195 -------

3 0 5

4 1 8

6 7 2

------ Current Step Cost: 9 - Search Cost: 329 - fringes Size: 129 - Explored Size: 196 -------

1 8 4

3 7 0

6 2 5

------ Current Step Cost: 9 - Search Cost: 331 - fringes Size: 130 - Explored Size: 197 -------

6 1 0

3 8 5

7 2 4

------ Current Step Cost: 10 - Search Cost: 333 - fringes Size: 131 - Explored Size: 198 -------

3 1 5

4 7 8

6 0 2

------ Current Step Cost: 9 - Search Cost: 334 - fringes Size: 131 - Explored Size: 199 -------

5 3 8

6 1 4

7 0 2

------ Current Step Cost: 7 - Search Cost: 336 - fringes Size: 132 - Explored Size: 200 -------

0 3 5

4 1 8

6 7 2

------ Current Step Cost: 10 - Search Cost: 338 - fringes Size: 133 - Explored Size: 201 -------

1 5 8

7 6 0

3 2 4

------ Current Step Cost: 7 - Search Cost: 339 - fringes Size: 133 - Explored Size: 202 -------

5 3 8

1 4 2

0 6 7

------ Current Step Cost: 8 - Search Cost: 341 - fringes Size: 134 - Explored Size: 203 -------

1 5 8

2 3 0

6 7 4

------ Current Step Cost: 9 - Search Cost: 342 - fringes Size: 134 - Explored Size: 204 -------

1 8 4

7 6 5

0 3 2

------ Current Step Cost: 8 - Search Cost: 344 - fringes Size: 135 - Explored Size: 205 -------

1 5 8

3 2 7

0 6 4

------ Current Step Cost: 8 - Search Cost: 345 - fringes Size: 135 - Explored Size: 206 -------

8 4 0

1 3 5

6 7 2

------ Current Step Cost: 10 - Search Cost: 346 - fringes Size: 135 - Explored Size: 207 -------

6 1 8

7 5 4

3 2 0

------ Current Step Cost: 8 - Search Cost: 347 - fringes Size: 135 - Explored Size: 208 -------

5 8 0

1 4 2

6 7 3

------ Current Step Cost: 10 - Search Cost: 348 - fringes Size: 135 - Explored Size: 209 -------

1 7 5

3 8 0

6 2 4

------ Current Step Cost: 9 - Search Cost: 349 - fringes Size: 135 - Explored Size: 210 -------

1 5 8

7 6 3

2 0 4

------ Current Step Cost: 7 - Search Cost: 351 - fringes Size: 136 - Explored Size: 211 -------

1 8 4

3 2 0

6 5 7

------ Current Step Cost: 9 - Search Cost: 353 - fringes Size: 137 - Explored Size: 212 -------

5 8 2

1 4 0

6 7 3

------ Current Step Cost: 11 - Search Cost: 355 - fringes Size: 138 - Explored Size: 213 -------

1 7 0

3 8 5

6 2 4

------ Current Step Cost: 10 - Search Cost: 357 - fringes Size: 139 - Explored Size: 214 -------

1 5 8

6 2 0

7 4 3

------ Current Step Cost: 7 - Search Cost: 358 - fringes Size: 139 - Explored Size: 215 -------

1 8 7

3 5 0

6 2 4

------ Current Step Cost: 9 - Search Cost: 359 - fringes Size: 139 - Explored Size: 216 -------

1 5 8

4 2 0

6 7 3

------ Current Step Cost: 9 - Search Cost: 361 - fringes Size: 140 - Explored Size: 217 -------

1 3 5

6 8 0

7 2 4

------ Current Step Cost: 7 - Search Cost: 363 - fringes Size: 141 - Explored Size: 218 -------

3 1 4

6 8 5

0 7 2

------ Current Step Cost: 10 - Search Cost: 365 - fringes Size: 142 - Explored Size: 219 -------

1 8 7

3 0 5

6 2 4

------ Current Step Cost: 10 - Search Cost: 366 - fringes Size: 142 - Explored Size: 220 -------

3 1 8

5 7 4

0 6 2

------ Current Step Cost: 8 - Search Cost: 369 - fringes Size: 144 - Explored Size: 221 -------

1 3 0

6 8 5

7 2 4

------ Current Step Cost: 8 - Search Cost: 370 - fringes Size: 144 - Explored Size: 222 -------

5 4 3

1 8 0

6 7 2

------ Current Step Cost: 9 - Search Cost: 371 - fringes Size: 144 - Explored Size: 223 -------

3 1 8

5 7 0

6 2 4

------ Current Step Cost: 9 - Search Cost: 372 - fringes Size: 144 - Explored Size: 224 -------

6 1 5

7 4 8

3 0 2

------ Current Step Cost: 9 - Search Cost: 374 - fringes Size: 145 - Explored Size: 225 -------

1 0 5

3 2 8

6 4 7

------ Current Step Cost: 9 - Search Cost: 376 - fringes Size: 146 - Explored Size: 226 -------

0 1 5

3 2 8

6 4 7

------ Current Step Cost: 10 - Search Cost: 378 - fringes Size: 147 - Explored Size: 227 -------

1 0 8

2 5 3

6 7 4

------ Current Step Cost: 9 - Search Cost: 379 - fringes Size: 147 - Explored Size: 228 -------

0 1 8

2 5 3

6 7 4

------ Current Step Cost: 10 - Search Cost: 381 - fringes Size: 148 - Explored Size: 229 -------

1 4 5

6 8 0

7 3 2

------ Current Step Cost: 7 - Search Cost: 382 - fringes Size: 148 - Explored Size: 230 -------

3 1 8

0 5 2

6 4 7

------ Current Step Cost: 9 - Search Cost: 384 - fringes Size: 149 - Explored Size: 231 -------

5 8 4

1 7 3

6 2 0

------ Current Step Cost: 8 - Search Cost: 386 - fringes Size: 150 - Explored Size: 232 -------

1 4 0

6 8 5

7 3 2

------ Current Step Cost: 8 - Search Cost: 387 - fringes Size: 150 - Explored Size: 233 -------

1 8 3

6 5 0

7 2 4

------ Current Step Cost: 7 - Search Cost: 387 - fringes Size: 149 - Explored Size: 234 -------

8 3 4

1 0 5

6 7 2

------ Current Step Cost: 10 - Search Cost: 389 - fringes Size: 150 - Explored Size: 235 -------

6 1 8

5 0 3

7 2 4

------ Current Step Cost: 8 - Search Cost: 392 - fringes Size: 152 - Explored Size: 236 -------

1 8 3

6 0 5

7 2 4

------ Current Step Cost: 8 - Search Cost: 395 - fringes Size: 154 - Explored Size: 237 -------

1 4 5

3 8 2

6 0 7

------ Current Step Cost: 9 - Search Cost: 398 - fringes Size: 156 - Explored Size: 238 -------

1 7 5

3 2 8

6 0 4

------ Current Step Cost: 9 - Search Cost: 400 - fringes Size: 157 - Explored Size: 239 -------

5 3 8

0 7 4

1 6 2

------ Current Step Cost: 7 - Search Cost: 402 - fringes Size: 158 - Explored Size: 240 -------

5 8 4

6 1 3

0 7 2

------ Current Step Cost: 8 - Search Cost: 404 - fringes Size: 159 - Explored Size: 241 -------

1 0 4

3 8 2

6 5 7

------ Current Step Cost: 9 - Search Cost: 405 - fringes Size: 159 - Explored Size: 242 -------

0 1 4

3 8 2

6 5 7

------ Current Step Cost: 10 - Search Cost: 407 - fringes Size: 160 - Explored Size: 243 -------

0 3 8

5 7 4

1 6 2

------ Current Step Cost: 8 - Search Cost: 408 - fringes Size: 160 - Explored Size: 244 -------

3 1 8

0 5 7

6 2 4

------ Current Step Cost: 9 - Search Cost: 409 - fringes Size: 160 - Explored Size: 245 -------

1 3 5

6 2 8

7 0 4

------ Current Step Cost: 7 - Search Cost: 411 - fringes Size: 161 - Explored Size: 246 -------

1 3 5

0 6 8

7 2 4

------ Current Step Cost: 7 - Search Cost: 413 - fringes Size: 162 - Explored Size: 247 -------

1 3 5

6 2 8

0 7 4

------ Current Step Cost: 8 - Search Cost: 415 - fringes Size: 163 - Explored Size: 248 -------

0 3 5

1 6 8

7 2 4

------ Current Step Cost: 8 - Search Cost: 416 - fringes Size: 163 - Explored Size: 249 -------

1 3 5

0 2 8

6 7 4

------ Current Step Cost: 9 - Search Cost: 417 - fringes Size: 163 - Explored Size: 250 -------

5 8 4

1 6 0

7 3 2

------ Current Step Cost: 7 - Search Cost: 419 - fringes Size: 164 - Explored Size: 251 -------

0 3 5

1 2 8

6 7 4

------ Current Step Cost: 10 - Search Cost: 421 - fringes Size: 165 - Explored Size: 252 -------

1 4 0

6 8 5

7 3 2

------ Current Step Cost: 8 - Search Cost: 422 - fringes Size: 165 - Explored Size: 252 -------

3 8 4

5 1 0

6 7 2

------ Current Step Cost: 9 - Search Cost: 422 - fringes Size: 164 - Explored Size: 253 -------

1 5 8

6 2 0

7 4 3

------ Current Step Cost: 7 - Search Cost: 424 - fringes Size: 165 - Explored Size: 253 -------

3 1 5

0 7 8

6 2 4

------ Current Step Cost: 9 - Search Cost: 425 - fringes Size: 165 - Explored Size: 254 -------

1 0 8

4 5 2

6 7 3

------ Current Step Cost: 9 - Search Cost: 427 - fringes Size: 166 - Explored Size: 255 -------

0 1 8

4 5 2

6 7 3

------ Current Step Cost: 10 - Search Cost: 429 - fringes Size: 167 - Explored Size: 256 -------

3 1 5

6 4 8

7 0 2

------ Current Step Cost: 9 - Search Cost: 430 - fringes Size: 167 - Explored Size: 257 -------

5 6 8

1 3 4

7 0 2

------ Current Step Cost: 7 - Search Cost: 432 - fringes Size: 168 - Explored Size: 258 -------

3 8 4

5 1 0

6 7 2

------ Current Step Cost: 9 - Search Cost: 434 - fringes Size: 169 - Explored Size: 258 -------

5 6 8

1 3 4

0 7 2

------ Current Step Cost: 8 - Search Cost: 436 - fringes Size: 170 - Explored Size: 259 -------

5 4 3

1 8 0

6 7 2

------ Current Step Cost: 9 - Search Cost: 437 - fringes Size: 170 - Explored Size: 259 -------

5 6 8

0 1 4

7 3 2

------ Current Step Cost: 7 - Search Cost: 438 - fringes Size: 170 - Explored Size: 260 -------

6 1 8

7 0 4

3 5 2

------ Current Step Cost: 8 - Search Cost: 440 - fringes Size: 171 - Explored Size: 261 -------

0 6 8

5 1 4

7 3 2

------ Current Step Cost: 8 - Search Cost: 443 - fringes Size: 173 - Explored Size: 262 -------

6 1 8

7 4 0

3 5 2

------ Current Step Cost: 9 - Search Cost: 444 - fringes Size: 173 - Explored Size: 263 -------

6 0 8

5 1 4

7 3 2

------ Current Step Cost: 7 - Search Cost: 446 - fringes Size: 174 - Explored Size: 264 -------

1 4 5

6 3 8

7 0 2

------ Current Step Cost: 7 - Search Cost: 447 - fringes Size: 174 - Explored Size: 265 -------

1 4 5

0 6 8

7 3 2

------ Current Step Cost: 7 - Search Cost: 448 - fringes Size: 174 - Explored Size: 266 -------

3 1 5

4 8 2

6 7 0

------ Current Step Cost: 10 - Search Cost: 450 - fringes Size: 175 - Explored Size: 267 -------

0 4 5

1 6 8

7 3 2

------ Current Step Cost: 8 - Search Cost: 451 - fringes Size: 175 - Explored Size: 268 -------

4 0 5

1 3 8

6 7 2

------ Current Step Cost: 9 - Search Cost: 452 - fringes Size: 175 - Explored Size: 269 -------

6 1 8

7 5 3

0 2 4

------ Current Step Cost: 8 - Search Cost: 454 - fringes Size: 176 - Explored Size: 270 -------

5 3 8

1 0 2

6 4 7

------ Current Step Cost: 8 - Search Cost: 455 - fringes Size: 176 - Explored Size: 271 -------

3 1 8

6 5 4

7 2 0

------ Current Step Cost: 8 - Search Cost: 458 - fringes Size: 178 - Explored Size: 272 -------

1 0 8

7 5 4

3 6 2

------ Current Step Cost: 7 - Search Cost: 459 - fringes Size: 178 - Explored Size: 273 -------

0 1 8

7 5 4

3 6 2

------ Current Step Cost: 8 - Search Cost: 461 - fringes Size: 179 - Explored Size: 274 -------

1 8 4

6 5 2

7 0 3

------ Current Step Cost: 7 - Search Cost: 462 - fringes Size: 179 - Explored Size: 275 -------

5 6 8

1 4 2

7 3 0

------ Current Step Cost: 8 - Search Cost: 464 - fringes Size: 180 - Explored Size: 276 -------

1 8 4

6 5 2

0 7 3

------ Current Step Cost: 8 - Search Cost: 465 - fringes Size: 180 - Explored Size: 277 -------

1 8 2

3 5 7

6 4 0

------ Current Step Cost: 10 - Search Cost: 466 - fringes Size: 180 - Explored Size: 278 -------

1 8 4

0 5 2

6 7 3

------ Current Step Cost: 9 - Search Cost: 467 - fringes Size: 180 - Explored Size: 279 -------

1 0 2

3 8 5

6 4 7

------ Current Step Cost: 11 - Search Cost: 469 - fringes Size: 181 - Explored Size: 280 -------

0 1 2

3 8 5

6 4 7

------ Current Step Cost: 12 - Search Cost: 471 - fringes Size: 182 - Explored Size: 281 -------

0 8 4

1 5 2

6 7 3

------ Current Step Cost: 10 - Search Cost: 472 - fringes Size: 182 - Explored Size: 282 -------

6 1 8

5 3 4

7 2 0

------ Current Step Cost: 8 - Search Cost: 473 - fringes Size: 182 - Explored Size: 283 -------

5 6 0

1 4 8

7 3 2

------ Current Step Cost: 8 - Search Cost: 474 - fringes Size: 182 - Explored Size: 284 -------

1 4 5

3 0 7

6 2 8

------ Current Step Cost: 10 - Search Cost: 475 - fringes Size: 182 - Explored Size: 285 -------

6 1 4

0 8 5

7 3 2

------ Current Step Cost: 9 - Search Cost: 478 - fringes Size: 184 - Explored Size: 286 -------

1 0 5

3 4 7

6 2 8

------ Current Step Cost: 11 - Search Cost: 480 - fringes Size: 185 - Explored Size: 287 -------

0 1 5

3 4 7

6 2 8

------ Current Step Cost: 12 - Search Cost: 482 - fringes Size: 186 - Explored Size: 288 -------

1 8 4

3 5 2

0 6 7

------ Current Step Cost: 8 - Search Cost: 483 - fringes Size: 186 - Explored Size: 289 -------

5 4 3

0 1 8

6 7 2

------ Current Step Cost: 9 - Search Cost: 484 - fringes Size: 186 - Explored Size: 290 -------

1 0 8

6 5 2

7 4 3

------ Current Step Cost: 7 - Search Cost: 486 - fringes Size: 187 - Explored Size: 291 -------

0 1 8

6 5 2

7 4 3

------ Current Step Cost: 8 - Search Cost: 488 - fringes Size: 188 - Explored Size: 292 -------

0 4 3

5 1 8

6 7 2

------ Current Step Cost: 10 - Search Cost: 489 - fringes Size: 188 - Explored Size: 293 -------

8 0 4

5 1 3

6 7 2

------ Current Step Cost: 9 - Search Cost: 490 - fringes Size: 188 - Explored Size: 294 -------

1 5 8

0 6 2

7 4 3

------ Current Step Cost: 7 - Search Cost: 492 - fringes Size: 189 - Explored Size: 295 -------

8 1 4

5 0 3

6 7 2

------ Current Step Cost: 10 - Search Cost: 494 - fringes Size: 190 - Explored Size: 296 -------

0 5 8

1 6 2

7 4 3

------ Current Step Cost: 8 - Search Cost: 497 - fringes Size: 192 - Explored Size: 297 -------

3 1 8

6 0 4

7 5 2

------ Current Step Cost: 8 - Search Cost: 498 - fringes Size: 192 - Explored Size: 298 -------

1 0 8

7 5 4

3 6 2

------ Current Step Cost: 7 - Search Cost: 501 - fringes Size: 194 - Explored Size: 298 -------

1 8 4

6 3 5

7 2 0

------ Current Step Cost: 8 - Search Cost: 502 - fringes Size: 194 - Explored Size: 299 -------

3 1 8

6 4 0

7 5 2

------ Current Step Cost: 9 - Search Cost: 503 - fringes Size: 194 - Explored Size: 300 -------

1 5 8

7 4 2

3 6 0

------ Current Step Cost: 8 - Search Cost: 505 - fringes Size: 195 - Explored Size: 301 -------

1 5 4

0 8 3

6 7 2

------ Current Step Cost: 9 - Search Cost: 506 - fringes Size: 195 - Explored Size: 302 -------

5 3 8

1 0 7

6 2 4

------ Current Step Cost: 8 - Search Cost: 508 - fringes Size: 196 - Explored Size: 303 -------

1 5 0

7 4 8

3 6 2

------ Current Step Cost: 8 - Search Cost: 511 - fringes Size: 198 - Explored Size: 304 -------

6 1 8

5 4 2

7 0 3

------ Current Step Cost: 9 - Search Cost: 512 - fringes Size: 198 - Explored Size: 305 -------

5 3 0

1 7 8

6 2 4

------ Current Step Cost: 8 - Search Cost: 514 - fringes Size: 199 - Explored Size: 306 -------

5 0 8

1 2 3

6 7 4

------ Current Step Cost: 9 - Search Cost: 515 - fringes Size: 199 - Explored Size: 307 -------

6 1 8

5 4 2

0 7 3

------ Current Step Cost: 10 - Search Cost: 517 - fringes Size: 200 - Explored Size: 308 -------

5 8 4

1 0 2

6 3 7

------ Current Step Cost: 8 - Search Cost: 518 - fringes Size: 200 - Explored Size: 309 -------

6 1 8

0 3 4

5 7 2

------ Current Step Cost: 9 - Search Cost: 521 - fringes Size: 202 - Explored Size: 310 -------

6 1 5

7 3 8

0 2 4

------ Current Step Cost: 8 - Search Cost: 523 - fringes Size: 203 - Explored Size: 311 -------

6 1 5

4 0 8

7 3 2

------ Current Step Cost: 8 - Search Cost: 524 - fringes Size: 203 - Explored Size: 312 -------

0 1 8

6 3 4

5 7 2

------ Current Step Cost: 10 - Search Cost: 527 - fringes Size: 205 - Explored Size: 313 -------

6 1 8

3 0 4

5 7 2

------ Current Step Cost: 10 - Search Cost: 528 - fringes Size: 205 - Explored Size: 314 -------

5 0 8

1 7 4

3 6 2

------ Current Step Cost: 7 - Search Cost: 531 - fringes Size: 207 - Explored Size: 315 -------

6 1 5

3 2 8

7 0 4

------ Current Step Cost: 9 - Search Cost: 533 - fringes Size: 208 - Explored Size: 316 -------

6 1 8

3 4 0

5 7 2

------ Current Step Cost: 11 - Search Cost: 535 - fringes Size: 209 - Explored Size: 317 -------

6 1 5

3 2 8

0 7 4

------ Current Step Cost: 10 - Search Cost: 537 - fringes Size: 210 - Explored Size: 318 -------

6 1 8

3 4 2

5 7 0

------ Current Step Cost: 12 - Search Cost: 538 - fringes Size: 210 - Explored Size: 319 -------

1 5 8

7 6 2

0 4 3

------ Current Step Cost: 8 - Search Cost: 539 - fringes Size: 210 - Explored Size: 320 -------

5 3 8

6 0 4

7 1 2

------ Current Step Cost: 8 - Search Cost: 540 - fringes Size: 210 - Explored Size: 321 -------

5 3 8

6 1 4

7 2 0

------ Current Step Cost: 8 - Search Cost: 543 - fringes Size: 212 - Explored Size: 322 -------

1 5 0

7 6 8

3 2 4

------ Current Step Cost: 8 - Search Cost: 544 - fringes Size: 212 - Explored Size: 323 -------

1 5 0

2 3 8

6 7 4

------ Current Step Cost: 10 - Search Cost: 545 - fringes Size: 212 - Explored Size: 324 -------

1 0 7

3 8 5

6 2 4

------ Current Step Cost: 11 - Search Cost: 546 - fringes Size: 212 - Explored Size: 325 -------

0 1 7

3 8 5

6 2 4

------ Current Step Cost: 12 - Search Cost: 547 - fringes Size: 212 - Explored Size: 326 -------

5 3 8

6 4 0

7 1 2

------ Current Step Cost: 9 - Search Cost: 548 - fringes Size: 212 - Explored Size: 327 -------

1 5 8

7 0 6

3 2 4

------ Current Step Cost: 8 - Search Cost: 550 - fringes Size: 213 - Explored Size: 328 -------

3 1 5

4 7 8

6 2 0

------ Current Step Cost: 10 - Search Cost: 553 - fringes Size: 215 - Explored Size: 329 -------

1 5 8

7 0 3

2 6 4

------ Current Step Cost: 8 - Search Cost: 554 - fringes Size: 215 - Explored Size: 330 -------

3 1 5

4 7 0

6 2 8

------ Current Step Cost: 11 - Search Cost: 557 - fringes Size: 217 - Explored Size: 331 -------

1 5 8

7 6 3

2 4 0

------ Current Step Cost: 8 - Search Cost: 559 - fringes Size: 218 - Explored Size: 332 -------

1 8 0

3 2 4

6 5 7

------ Current Step Cost: 10 - Search Cost: 560 - fringes Size: 218 - Explored Size: 333 -------

5 8 2

1 4 3

6 7 0

------ Current Step Cost: 12 - Search Cost: 561 - fringes Size: 218 - Explored Size: 334 -------

1 7 5

3 8 4

6 2 0

------ Current Step Cost: 10 - Search Cost: 562 - fringes Size: 218 - Explored Size: 335 -------

1 5 8

4 0 2

3 6 7

------ Current Step Cost: 8 - Search Cost: 563 - fringes Size: 218 - Explored Size: 336 -------

1 8 7

3 5 4

6 2 0

------ Current Step Cost: 10 - Search Cost: 566 - fringes Size: 220 - Explored Size: 337 -------

1 5 0

4 2 8

6 7 3

------ Current Step Cost: 10 - Search Cost: 567 - fringes Size: 220 - Explored Size: 338 -------

1 5 8

2 3 4

6 7 0

------ Current Step Cost: 10 - Search Cost: 568 - fringes Size: 220 - Explored Size: 339 -------

1 5 8

4 2 3

6 7 0

------ Current Step Cost: 10 - Search Cost: 569 - fringes Size: 220 - Explored Size: 340 -------

1 0 7

3 8 5

6 2 4

------ Current Step Cost: 11 - Search Cost: 570 - fringes Size: 220 - Explored Size: 340 -------

1 4 5

6 8 2

7 3 0

------ Current Step Cost: 8 - Search Cost: 570 - fringes Size: 219 - Explored Size: 341 -------

1 8 0

2 5 3

6 7 4

------ Current Step Cost: 10 - Search Cost: 571 - fringes Size: 219 - Explored Size: 342 -------

1 5 8

6 3 7

0 2 4

------ Current Step Cost: 8 - Search Cost: 572 - fringes Size: 219 - Explored Size: 343 -------

1 8 7

3 2 5

6 0 4

------ Current Step Cost: 11 - Search Cost: 573 - fringes Size: 219 - Explored Size: 344 -------

3 1 0

5 7 8

6 2 4

------ Current Step Cost: 10 - Search Cost: 575 - fringes Size: 220 - Explored Size: 345 -------

3 1 8

5 0 7

6 2 4

------ Current Step Cost: 10 - Search Cost: 576 - fringes Size: 220 - Explored Size: 346 -------

1 2 5

3 0 8

6 4 7

------ Current Step Cost: 10 - Search Cost: 578 - fringes Size: 221 - Explored Size: 347 -------

3 5 0

4 1 8

6 7 2

------ Current Step Cost: 10 - Search Cost: 581 - fringes Size: 223 - Explored Size: 348 -------

6 1 8

7 5 0

3 2 4

------ Current Step Cost: 9 - Search Cost: 582 - fringes Size: 223 - Explored Size: 349 -------

1 8 4

7 6 5

3 0 2

------ Current Step Cost: 9 - Search Cost: 584 - fringes Size: 224 - Explored Size: 350 -------

1 8 4

6 3 5

7 0 2

------ Current Step Cost: 9 - Search Cost: 586 - fringes Size: 225 - Explored Size: 350 -------

1 3 5

6 8 4

7 2 0

------ Current Step Cost: 8 - Search Cost: 586 - fringes Size: 224 - Explored Size: 351 -------

1 8 3

6 5 4

7 2 0

------ Current Step Cost: 8 - Search Cost: 587 - fringes Size: 224 - Explored Size: 352 -------

6 1 5

3 8 4

7 2 0

------ Current Step Cost: 10 - Search Cost: 588 - fringes Size: 224 - Explored Size: 353 -------

1 8 4

3 2 7

6 5 0

------ Current Step Cost: 10 - Search Cost: 589 - fringes Size: 224 - Explored Size: 354 -------

6 0 1

5 4 8

7 3 2

------ Current Step Cost: 9 - Search Cost: 590 - fringes Size: 224 - Explored Size: 355 -------

8 3 4

0 1 5

6 7 2

------ Current Step Cost: 11 - Search Cost: 592 - fringes Size: 225 - Explored Size: 356 -------

6 1 8

5 2 3

7 0 4

------ Current Step Cost: 9 - Search Cost: 594 - fringes Size: 226 - Explored Size: 357 -------

1 0 3

6 8 5

7 2 4

------ Current Step Cost: 9 - Search Cost: 596 - fringes Size: 227 - Explored Size: 358 -------

0 1 3

6 8 5

7 2 4

------ Current Step Cost: 10 - Search Cost: 597 - fringes Size: 227 - Explored Size: 359 -------

1 8 3

6 2 5

7 0 4

------ Current Step Cost: 9 - Search Cost: 598 - fringes Size: 227 - Explored Size: 360 -------

1 4 5

3 0 2

6 8 7

------ Current Step Cost: 10 - Search Cost: 600 - fringes Size: 228 - Explored Size: 361 -------

3 1 8

5 4 2

0 6 7

------ Current Step Cost: 10 - Search Cost: 603 - fringes Size: 230 - Explored Size: 362 -------

1 7 5

3 2 8

6 4 0

------ Current Step Cost: 10 - Search Cost: 604 - fringes Size: 230 - Explored Size: 363 -------

1 8 4

3 0 7

6 2 5

------ Current Step Cost: 10 - Search Cost: 605 - fringes Size: 230 - Explored Size: 364 -------

5 6 8

7 1 4

0 3 2

------ Current Step Cost: 8 - Search Cost: 608 - fringes Size: 232 - Explored Size: 365 -------

1 3 5

7 6 8

0 2 4

------ Current Step Cost: 8 - Search Cost: 609 - fringes Size: 232 - Explored Size: 366 -------

3 1 8

0 7 4

5 6 2

------ Current Step Cost: 9 - Search Cost: 610 - fringes Size: 232 - Explored Size: 367 -------

0 1 8

3 7 4

5 6 2

------ Current Step Cost: 10 - Search Cost: 612 - fringes Size: 233 - Explored Size: 368 -------

3 1 8

5 0 7

6 2 4

------ Current Step Cost: 10 - Search Cost: 613 - fringes Size: 233 - Explored Size: 368 -------

5 3 8

7 0 4

1 6 2

------ Current Step Cost: 8 - Search Cost: 615 - fringes Size: 234 - Explored Size: 369 -------

1 3 5

6 2 8

7 4 0

------ Current Step Cost: 8 - Search Cost: 618 - fringes Size: 236 - Explored Size: 370 -------

5 3 8

7 4 0

1 6 2

------ Current Step Cost: 9 - Search Cost: 619 - fringes Size: 236 - Explored Size: 371 -------

1 3 5

6 2 0

7 4 8

------ Current Step Cost: 9 - Search Cost: 621 - fringes Size: 237 - Explored Size: 372 -------

1 4 0

3 8 2

6 5 7

------ Current Step Cost: 10 - Search Cost: 623 - fringes Size: 238 - Explored Size: 373 -------

5 4 3

1 8 2

6 7 0

------ Current Step Cost: 10 - Search Cost: 624 - fringes Size: 238 - Explored Size: 374 -------

1 4 2

3 8 0

6 5 7

------ Current Step Cost: 11 - Search Cost: 625 - fringes Size: 238 - Explored Size: 375 -------

3 8 4

5 1 2

6 7 0

------ Current Step Cost: 10 - Search Cost: 627 - fringes Size: 239 - Explored Size: 376 -------

5 0 8

1 3 7

6 2 4

------ Current Step Cost: 9 - Search Cost: 628 - fringes Size: 239 - Explored Size: 377 -------

3 4 1

5 0 8

6 7 2

------ Current Step Cost: 10 - Search Cost: 629 - fringes Size: 239 - Explored Size: 378 -------

5 6 8

1 0 3

7 2 4

------ Current Step Cost: 8 - Search Cost: 632 - fringes Size: 241 - Explored Size: 379 -------

1 0 3

6 8 5

7 2 4

------ Current Step Cost: 9 - Search Cost: 635 - fringes Size: 243 - Explored Size: 379 -------

2 1 8

0 5 3

6 7 4

------ Current Step Cost: 11 - Search Cost: 635 - fringes Size: 242 - Explored Size: 380 -------

6 1 5

7 4 8

3 2 0

------ Current Step Cost: 10 - Search Cost: 637 - fringes Size: 243 - Explored Size: 381 -------

5 8 4

1 7 0

6 2 3

------ Current Step Cost: 9 - Search Cost: 638 - fringes Size: 243 - Explored Size: 382 -------

6 1 5

7 4 0

3 2 8

------ Current Step Cost: 11 - Search Cost: 640 - fringes Size: 244 - Explored Size: 383 -------

3 8 4

5 1 2

6 7 0

------ Current Step Cost: 10 - Search Cost: 642 - fringes Size: 245 - Explored Size: 383 -------

5 6 8

1 3 4

7 2 0

------ Current Step Cost: 8 - Search Cost: 643 - fringes Size: 245 - Explored Size: 384 -------

1 8 0

4 5 2

6 7 3

------ Current Step Cost: 10 - Search Cost: 644 - fringes Size: 245 - Explored Size: 385 -------

3 0 4

8 1 5

6 7 2

------ Current Step Cost: 11 - Search Cost: 645 - fringes Size: 245 - Explored Size: 386 -------

1 8 2

4 5 0

6 7 3

------ Current Step Cost: 11 - Search Cost: 647 - fringes Size: 246 - Explored Size: 387 -------

6 1 8

0 7 4

3 5 2

------ Current Step Cost: 9 - Search Cost: 649 - fringes Size: 247 - Explored Size: 388 -------

1 8 2

4 0 5

6 7 3

------ Current Step Cost: 12 - Search Cost: 651 - fringes Size: 248 - Explored Size: 389 -------

6 1 8

3 7 4

0 5 2

------ Current Step Cost: 10 - Search Cost: 654 - fringes Size: 250 - Explored Size: 390 -------

1 8 2

0 4 5

6 7 3

------ Current Step Cost: 13 - Search Cost: 655 - fringes Size: 250 - Explored Size: 391 -------

1 3 5

2 0 8

6 7 4

------ Current Step Cost: 10 - Search Cost: 657 - fringes Size: 251 - Explored Size: 392 -------

6 1 0

7 4 8

3 5 2

------ Current Step Cost: 10 - Search Cost: 660 - fringes Size: 253 - Explored Size: 393 -------

3 1 8

5 0 2

6 4 7

------ Current Step Cost: 10 - Search Cost: 661 - fringes Size: 253 - Explored Size: 394 -------

1 8 0

6 5 2

7 4 3

------ Current Step Cost: 8 - Search Cost: 663 - fringes Size: 254 - Explored Size: 395 -------

5 3 1

0 4 8

6 7 2

------ Current Step Cost: 11 - Search Cost: 664 - fringes Size: 254 - Explored Size: 396 -------

1 8 2

6 5 0

7 4 3

------ Current Step Cost: 9 - Search Cost: 666 - fringes Size: 255 - Explored Size: 397 -------

5 0 8

1 4 2

3 6 7

------ Current Step Cost: 9 - Search Cost: 668 - fringes Size: 256 - Explored Size: 398 -------

1 4 5

7 6 8

0 3 2

------ Current Step Cost: 8 - Search Cost: 670 - fringes Size: 257 - Explored Size: 399 -------

1 8 2

6 0 5

7 4 3

------ Current Step Cost: 10 - Search Cost: 671 - fringes Size: 257 - Explored Size: 400 -------

4 3 5

1 0 8

6 7 2

------ Current Step Cost: 10 - Search Cost: 674 - fringes Size: 259 - Explored Size: 401 -------

5 0 8

1 3 2

6 4 7

------ Current Step Cost: 9 - Search Cost: 677 - fringes Size: 261 - Explored Size: 402 -------

1 8 2

6 4 5

7 0 3

------ Current Step Cost: 11 - Search Cost: 678 - fringes Size: 261 - Explored Size: 403 -------

8 0 4

1 6 5

7 3 2

------ Current Step Cost: 9 - Search Cost: 680 - fringes Size: 262 - Explored Size: 404 -------

5 3 8

0 1 2

6 4 7

------ Current Step Cost: 9 - Search Cost: 682 - fringes Size: 263 - Explored Size: 405 -------

1 8 2

6 4 5

0 7 3

------ Current Step Cost: 12 - Search Cost: 684 - fringes Size: 264 - Explored Size: 406 -------

1 7 5

0 3 8

6 2 4

------ Current Step Cost: 9 - Search Cost: 684 - fringes Size: 263 - Explored Size: 407 -------

0 3 8

5 1 2

6 4 7

------ Current Step Cost: 10 - Search Cost: 686 - fringes Size: 264 - Explored Size: 408 -------

1 5 8

6 3 2

0 4 7

------ Current Step Cost: 8 - Search Cost: 687 - fringes Size: 264 - Explored Size: 409 -------

0 7 5

1 3 8

6 2 4

------ Current Step Cost: 10 - Search Cost: 688 - fringes Size: 264 - Explored Size: 410 -------

3 1 4

8 7 5

6 0 2

------ Current Step Cost: 11 - Search Cost: 689 - fringes Size: 264 - Explored Size: 411 -------

1 8 4

6 0 2

7 5 3

------ Current Step Cost: 8 - Search Cost: 691 - fringes Size: 265 - Explored Size: 412 -------

1 8 2

0 3 5

6 4 7

------ Current Step Cost: 11 - Search Cost: 694 - fringes Size: 267 - Explored Size: 413 -------

1 8 0

7 5 4

3 6 2

------ Current Step Cost: 8 - Search Cost: 696 - fringes Size: 268 - Explored Size: 414 -------

5 4 8

1 0 2

6 7 3

------ Current Step Cost: 10 - Search Cost: 697 - fringes Size: 268 - Explored Size: 415 -------

0 8 2

1 3 5

6 4 7

------ Current Step Cost: 12 - Search Cost: 700 - fringes Size: 270 - Explored Size: 416 -------

3 1 4

8 5 0

6 7 2

------ Current Step Cost: 11 - Search Cost: 701 - fringes Size: 270 - Explored Size: 417 -------

5 8 0

1 6 3

7 2 4

------ Current Step Cost: 8 - Search Cost: 703 - fringes Size: 271 - Explored Size: 418 -------

1 8 4

5 0 2

6 7 3

------ Current Step Cost: 10 - Search Cost: 704 - fringes Size: 271 - Explored Size: 419 -------

1 4 5

3 2 7

6 0 8

------ Current Step Cost: 11 - Search Cost: 707 - fringes Size: 273 - Explored Size: 420 -------

6 1 4

7 8 5

0 3 2

------ Current Step Cost: 10 - Search Cost: 709 - fringes Size: 274 - Explored Size: 421 -------

6 1 8

5 3 0

7 2 4

------ Current Step Cost: 9 - Search Cost: 710 - fringes Size: 274 - Explored Size: 422 -------

6 1 4

8 0 5

7 3 2

------ Current Step Cost: 10 - Search Cost: 711 - fringes Size: 274 - Explored Size: 423 -------

1 8 4

0 3 2

6 5 7

------ Current Step Cost: 9 - Search Cost: 714 - fringes Size: 276 - Explored Size: 424 -------

1 5 0

3 4 7

6 2 8

------ Current Step Cost: 12 - Search Cost: 716 - fringes Size: 277 - Explored Size: 425 -------

1 8 4

0 7 5

3 6 2

------ Current Step Cost: 9 - Search Cost: 717 - fringes Size: 277 - Explored Size: 426 -------

0 8 4

1 3 2

6 5 7

------ Current Step Cost: 10 - Search Cost: 719 - fringes Size: 278 - Explored Size: 427 -------

1 8 3

0 6 5

7 2 4

------ Current Step Cost: 9 - Search Cost: 720 - fringes Size: 278 - Explored Size: 428 -------

0 8 4

1 7 5

3 6 2

------ Current Step Cost: 10 - Search Cost: 722 - fringes Size: 279 - Explored Size: 429 -------

1 8 0

3 7 4

6 2 5

------ Current Step Cost: 10 - Search Cost: 723 - fringes Size: 279 - Explored Size: 430 -------

0 8 3

1 6 5

7 2 4

------ Current Step Cost: 10 - Search Cost: 724 - fringes Size: 279 - Explored Size: 431 -------

8 4 0

5 1 3

6 7 2

------ Current Step Cost: 10 - Search Cost: 725 - fringes Size: 279 - Explored Size: 432 -------

1 5 8

2 7 3

6 0 4

------ Current Step Cost: 9 - Search Cost: 726 - fringes Size: 279 - Explored Size: 433 -------

6 1 5

3 2 8

7 4 0

------ Current Step Cost: 10 - Search Cost: 728 - fringes Size: 280 - Explored Size: 434 -------

5 8 4

1 0 6

7 3 2

------ Current Step Cost: 8 - Search Cost: 729 - fringes Size: 280 - Explored Size: 435 -------

6 1 5

3 2 0

7 4 8

------ Current Step Cost: 11 - Search Cost: 732 - fringes Size: 282 - Explored Size: 436 -------

1 5 8

4 7 2

6 0 3

------ Current Step Cost: 9 - Search Cost: 734 - fringes Size: 283 - Explored Size: 437 -------

6 1 0

3 2 5

7 4 8

------ Current Step Cost: 12 - Search Cost: 736 - fringes Size: 284 - Explored Size: 438 -------

8 1 4

5 3 0

6 7 2

------ Current Step Cost: 11 - Search Cost: 737 - fringes Size: 284 - Explored Size: 439 -------

8 1 4

0 5 3

6 7 2

------ Current Step Cost: 11 - Search Cost: 739 - fringes Size: 285 - Explored Size: 440 -------

3 1 0

6 4 8

7 5 2

------ Current Step Cost: 10 - Search Cost: 741 - fringes Size: 286 - Explored Size: 441 -------

0 1 4

8 5 3

6 7 2

------ Current Step Cost: 12 - Search Cost: 742 - fringes Size: 286 - Explored Size: 442 -------

5 8 4

1 6 2

7 3 0

------ Current Step Cost: 8 - Search Cost: 743 - fringes Size: 286 - Explored Size: 443 -------

3 1 8

5 0 2

6 4 7

------ Current Step Cost: 10 - Search Cost: 744 - fringes Size: 286 - Explored Size: 443 -------

5 0 8

1 3 7

6 2 4

------ Current Step Cost: 9 - Search Cost: 746 - fringes Size: 287 - Explored Size: 443 -------

5 3 8

1 2 7

6 0 4

------ Current Step Cost: 9 - Search Cost: 747 - fringes Size: 287 - Explored Size: 444 -------

1 5 0

6 2 8

7 4 3

------ Current Step Cost: 8 - Search Cost: 749 - fringes Size: 288 - Explored Size: 445 -------

3 8 4

5 0 1

6 7 2

------ Current Step Cost: 10 - Search Cost: 750 - fringes Size: 288 - Explored Size: 446 -------

4 1 8

0 5 2

6 7 3

------ Current Step Cost: 11 - Search Cost: 753 - fringes Size: 290 - Explored Size: 447 -------

5 2 8

1 0 3

6 7 4

------ Current Step Cost: 10 - Search Cost: 755 - fringes Size: 291 - Explored Size: 448 -------

5 0 4

1 8 2

6 3 7

------ Current Step Cost: 9 - Search Cost: 758 - fringes Size: 293 - Explored Size: 449 -------

5 4 3

1 8 2

6 7 0

------ Current Step Cost: 10 - Search Cost: 760 - fringes Size: 294 - Explored Size: 449 -------

0 5 4

1 8 2

6 3 7

------ Current Step Cost: 10 - Search Cost: 761 - fringes Size: 294 - Explored Size: 450 -------

5 8 4

0 1 2

6 3 7

------ Current Step Cost: 9 - Search Cost: 762 - fringes Size: 294 - Explored Size: 451 -------

3 1 5

7 0 8

6 2 4

------ Current Step Cost: 10 - Search Cost: 764 - fringes Size: 295 - Explored Size: 452 -------

0 8 4

5 1 2

6 3 7

------ Current Step Cost: 10 - Search Cost: 767 - fringes Size: 297 - Explored Size: 453 -------

3 1 8

0 6 4

7 5 2

------ Current Step Cost: 9 - Search Cost: 768 - fringes Size: 297 - Explored Size: 454 -------

0 1 8

3 6 4

7 5 2

------ Current Step Cost: 10 - Search Cost: 770 - fringes Size: 298 - Explored Size: 455 -------

5 6 8

0 3 4

1 7 2

------ Current Step Cost: 9 - Search Cost: 771 - fringes Size: 298 - Explored Size: 456 -------

6 1 5

4 3 8

7 0 2

------ Current Step Cost: 9 - Search Cost: 773 - fringes Size: 299 - Explored Size: 457 -------

0 6 8

5 3 4

1 7 2

------ Current Step Cost: 10 - Search Cost: 775 - fringes Size: 300 - Explored Size: 458 -------

5 6 8

3 0 4

1 7 2

------ Current Step Cost: 10 - Search Cost: 776 - fringes Size: 300 - Explored Size: 459 -------

6 1 5

4 3 8

0 7 2

------ Current Step Cost: 10 - Search Cost: 779 - fringes Size: 302 - Explored Size: 460 -------

5 6 8

3 4 0

1 7 2

------ Current Step Cost: 11 - Search Cost: 780 - fringes Size: 302 - Explored Size: 461 -------

3 8 4

5 0 1

6 7 2

------ Current Step Cost: 10 - Search Cost: 782 - fringes Size: 303 - Explored Size: 461 -------

5 8 0

1 7 4

3 6 2

------ Current Step Cost: 8 - Search Cost: 785 - fringes Size: 305 - Explored Size: 462 -------

3 1 5

6 4 8

7 2 0

------ Current Step Cost: 10 - Search Cost: 786 - fringes Size: 305 - Explored Size: 463 -------

1 8 2

3 5 7

6 0 4

------ Current Step Cost: 11 - Search Cost: 787 - fringes Size: 305 - Explored Size: 464 -------

3 1 5

6 4 0

7 2 8

------ Current Step Cost: 11 - Search Cost: 789 - fringes Size: 306 - Explored Size: 465 -------

6 1 8

7 4 2

3 5 0

------ Current Step Cost: 10 - Search Cost: 791 - fringes Size: 307 - Explored Size: 466 -------

3 1 0

6 4 5

7 2 8

------ Current Step Cost: 12 - Search Cost: 792 - fringes Size: 307 - Explored Size: 467 -------

5 7 8

1 0 4

3 6 2

------ Current Step Cost: 8 - Search Cost: 793 - fringes Size: 307 - Explored Size: 468 -------

5 0 8

1 3 2

6 4 7

------ Current Step Cost: 9 - Search Cost: 796 - fringes Size: 309 - Explored Size: 468 -------

5 7 8

1 4 0

3 6 2

------ Current Step Cost: 9 - Search Cost: 797 - fringes Size: 309 - Explored Size: 469 -------

5 8 4

1 7 3

0 6 2

------ Current Step Cost: 8 - Search Cost: 799 - fringes Size: 310 - Explored Size: 470 -------

6 1 0

3 4 8

5 7 2

------ Current Step Cost: 12 - Search Cost: 800 - fringes Size: 310 - Explored Size: 471 -------

6 1 5

7 3 8

2 0 4

------ Current Step Cost: 9 - Search Cost: 801 - fringes Size: 310 - Explored Size: 472 -------

6 8 0

5 1 4

7 3 2

------ Current Step Cost: 8 - Search Cost: 803 - fringes Size: 311 - Explored Size: 473 -------

1 4 5

6 3 8

7 2 0

------ Current Step Cost: 8 - Search Cost: 804 - fringes Size: 311 - Explored Size: 474 -------

5 6 8

1 4 2

7 0 3

------ Current Step Cost: 9 - Search Cost: 805 - fringes Size: 311 - Explored Size: 475 -------

1 4 5

6 3 0

7 2 8

------ Current Step Cost: 9 - Search Cost: 807 - fringes Size: 312 - Explored Size: 476 -------

5 6 8

1 4 2

0 7 3

------ Current Step Cost: 10 - Search Cost: 809 - fringes Size: 313 - Explored Size: 477 -------

1 4 0

6 3 5

7 2 8

------ Current Step Cost: 10 - Search Cost: 810 - fringes Size: 313 - Explored Size: 478 -------

5 3 8

1 2 0

6 4 7

------ Current Step Cost: 9 - Search Cost: 811 - fringes Size: 313 - Explored Size: 479 -------

4 5 0

1 3 8

6 7 2

------ Current Step Cost: 10 - Search Cost: 813 - fringes Size: 314 - Explored Size: 480 -------

6 1 8

7 5 3

2 0 4

------ Current Step Cost: 9 - Search Cost: 814 - fringes Size: 314 - Explored Size: 481 -------

3 1 0

4 7 5

6 2 8

------ Current Step Cost: 12 - Search Cost: 816 - fringes Size: 315 - Explored Size: 482 -------

7 1 8

0 5 4

3 6 2

------ Current Step Cost: 9 - Search Cost: 817 - fringes Size: 315 - Explored Size: 483 -------

3 1 8

6 5 0

7 2 4

------ Current Step Cost: 9 - Search Cost: 819 - fringes Size: 316 - Explored Size: 484 -------

7 1 8

3 5 4

0 6 2

------ Current Step Cost: 10 - Search Cost: 821 - fringes Size: 317 - Explored Size: 485 -------

3 1 8

6 0 5

7 2 4

------ Current Step Cost: 10 - Search Cost: 822 - fringes Size: 317 - Explored Size: 486 -------

7 1 8

3 5 4

6 0 2

------ Current Step Cost: 11 - Search Cost: 825 - fringes Size: 319 - Explored Size: 487 -------

5 4 3

1 7 8

6 0 2

------ Current Step Cost: 9 - Search Cost: 827 - fringes Size: 320 - Explored Size: 488 -------

1 2 5

3 4 8

6 0 7

------ Current Step Cost: 11 - Search Cost: 829 - fringes Size: 321 - Explored Size: 489 -------

1 5 0

6 2 8

7 4 3

------ Current Step Cost: 8 - Search Cost: 831 - fringes Size: 322 - Explored Size: 489 -------

1 2 5

3 4 8

6 7 0

------ Current Step Cost: 12 - Search Cost: 832 - fringes Size: 322 - Explored Size: 490 -------

5 3 8

0 4 2

1 6 7

------ Current Step Cost: 9 - Search Cost: 833 - fringes Size: 322 - Explored Size: 491 -------

1 2 5

3 4 0

6 7 8

------ Current Step Cost: 13 - Search Cost: 835 - fringes Size: 323 - Explored Size: 492 -------

0 3 8

5 4 2

1 6 7

------ Current Step Cost: 10 - Search Cost: 837 - fringes Size: 324 - Explored Size: 493 -------

1 2 0

3 4 5

6 7 8

------ Current Step Cost: 14 - Search Cost: 838 - fringes Size: 324 - Explored Size: 494 -------

6 1 8

5 3 0

7 2 4

------ Current Step Cost: 9 - Search Cost: 839 - fringes Size: 324 - Explored Size: 494 -------

1 0 2

3 4 5

6 7 8

------ Current Step Cost: 15 - Search Cost: 840 - fringes Size: 324 - Explored Size: 495 -------

0 1 2

3 4 5

6 7 8

------ Current Step Cost: 16 - Search Cost: 842 - fringes Size: 325 - Explored Size: 496 -------

----------- GOAL FOUND AT SEARCH COST OF 842------------

--------------- FINISHED H1, STARTING H2 -------------------

1 5 8

6 3 4

0 7 2

------ Current Step Cost: 0 - Search Cost: 0 - fringes Size: 0 - Explored Size: 1 -------

1 5 8

0 3 4

6 7 2

------ Current Step Cost: 1 - Search Cost: 2 - fringes Size: 1 - Explored Size: 2 -------

1 5 8

3 0 4

6 7 2

------ Current Step Cost: 2 - Search Cost: 4 - fringes Size: 2 - Explored Size: 3 -------

1 0 8

3 5 4

6 7 2

------ Current Step Cost: 3 - Search Cost: 7 - fringes Size: 4 - Explored Size: 4 -------

1 5 8

3 4 0

6 7 2

------ Current Step Cost: 3 - Search Cost: 9 - fringes Size: 5 - Explored Size: 5 -------

0 1 8

3 5 4

6 7 2

------ Current Step Cost: 4 - Search Cost: 11 - fringes Size: 6 - Explored Size: 6 -------

1 5 8

3 4 2

6 7 0

------ Current Step Cost: 4 - Search Cost: 12 - fringes Size: 6 - Explored Size: 7 -------

1 5 0

3 4 8

6 7 2

------ Current Step Cost: 4 - Search Cost: 13 - fringes Size: 6 - Explored Size: 8 -------

1 0 5

3 4 8

6 7 2

------ Current Step Cost: 5 - Search Cost: 14 - fringes Size: 6 - Explored Size: 9 -------

0 1 5

3 4 8

6 7 2

------ Current Step Cost: 6 - Search Cost: 16 - fringes Size: 7 - Explored Size: 10 -------

1 5 8

3 7 4

6 0 2

------ Current Step Cost: 3 - Search Cost: 17 - fringes Size: 7 - Explored Size: 11 -------

3 1 5

0 4 8

6 7 2

------ Current Step Cost: 7 - Search Cost: 19 - fringes Size: 8 - Explored Size: 12 -------

3 1 8

0 5 4

6 7 2

------ Current Step Cost: 5 - Search Cost: 21 - fringes Size: 9 - Explored Size: 13 -------

1 8 0

3 5 4

6 7 2

------ Current Step Cost: 4 - Search Cost: 23 - fringes Size: 10 - Explored Size: 14 -------

0 5 8

1 3 4

6 7 2

------ Current Step Cost: 2 - Search Cost: 24 - fringes Size: 10 - Explored Size: 15 -------

1 5 8

3 4 2

6 0 7

------ Current Step Cost: 5 - Search Cost: 25 - fringes Size: 10 - Explored Size: 16 -------

1 5 8

6 3 4

7 0 2

------ Current Step Cost: 1 - Search Cost: 27 - fringes Size: 11 - Explored Size: 17 -------

1 4 5

3 0 8

6 7 2

------ Current Step Cost: 6 - Search Cost: 29 - fringes Size: 12 - Explored Size: 18 -------

1 5 8

6 3 4

7 2 0

------ Current Step Cost: 2 - Search Cost: 32 - fringes Size: 14 - Explored Size: 19 -------

1 4 5

3 8 0

6 7 2

------ Current Step Cost: 7 - Search Cost: 33 - fringes Size: 14 - Explored Size: 20 -------

3 1 8

5 0 4

6 7 2

------ Current Step Cost: 6 - Search Cost: 35 - fringes Size: 15 - Explored Size: 21 -------

1 5 8

3 7 4

6 2 0

------ Current Step Cost: 4 - Search Cost: 38 - fringes Size: 17 - Explored Size: 22 -------

3 1 8

5 4 0

6 7 2

------ Current Step Cost: 7 - Search Cost: 39 - fringes Size: 17 - Explored Size: 23 -------

1 5 8

3 7 4

0 6 2

------ Current Step Cost: 4 - Search Cost: 41 - fringes Size: 18 - Explored Size: 24 -------

3 1 8

5 4 2

6 7 0

------ Current Step Cost: 8 - Search Cost: 42 - fringes Size: 18 - Explored Size: 25 -------

1 4 5

3 8 2

6 7 0

------ Current Step Cost: 8 - Search Cost: 43 - fringes Size: 18 - Explored Size: 26 -------

3 1 5

6 4 8

0 7 2

------ Current Step Cost: 8 - Search Cost: 44 - fringes Size: 18 - Explored Size: 27 -------

3 1 0

5 4 8

6 7 2

------ Current Step Cost: 8 - Search Cost: 45 - fringes Size: 18 - Explored Size: 28 -------

3 1 5

4 0 8

6 7 2

------ Current Step Cost: 8 - Search Cost: 46 - fringes Size: 18 - Explored Size: 29 -------

3 1 8

6 5 4

0 7 2

------ Current Step Cost: 6 - Search Cost: 49 - fringes Size: 20 - Explored Size: 30 -------

1 5 8

3 0 2

6 4 7

------ Current Step Cost: 6 - Search Cost: 50 - fringes Size: 20 - Explored Size: 31 -------

1 5 8

3 4 2

0 6 7

------ Current Step Cost: 6 - Search Cost: 53 - fringes Size: 22 - Explored Size: 32 -------

1 0 8

3 5 2

6 4 7

------ Current Step Cost: 7 - Search Cost: 54 - fringes Size: 22 - Explored Size: 33 -------

1 8 4

3 5 0

6 7 2

------ Current Step Cost: 5 - Search Cost: 56 - fringes Size: 23 - Explored Size: 34 -------

0 1 8

3 5 2

6 4 7

------ Current Step Cost: 8 - Search Cost: 58 - fringes Size: 24 - Explored Size: 35 -------

1 8 4

3 0 5

6 7 2

------ Current Step Cost: 6 - Search Cost: 59 - fringes Size: 24 - Explored Size: 36 -------

1 5 8

6 0 4

7 3 2

------ Current Step Cost: 2 - Search Cost: 62 - fringes Size: 26 - Explored Size: 37 -------

1 4 5

3 7 8

6 0 2

------ Current Step Cost: 7 - Search Cost: 65 - fringes Size: 28 - Explored Size: 38 -------

1 5 8

6 4 0

7 3 2

------ Current Step Cost: 3 - Search Cost: 67 - fringes Size: 29 - Explored Size: 39 -------

1 8 4

3 5 2

6 7 0

------ Current Step Cost: 6 - Search Cost: 69 - fringes Size: 30 - Explored Size: 40 -------

1 5 8

6 4 2

7 3 0

------ Current Step Cost: 4 - Search Cost: 70 - fringes Size: 30 - Explored Size: 41 -------

1 0 4

3 8 5

6 7 2

------ Current Step Cost: 7 - Search Cost: 71 - fringes Size: 30 - Explored Size: 42 -------

1 0 8

6 5 4

7 3 2

------ Current Step Cost: 3 - Search Cost: 73 - fringes Size: 31 - Explored Size: 43 -------

1 4 0

3 8 5

6 7 2

------ Current Step Cost: 8 - Search Cost: 75 - fringes Size: 32 - Explored Size: 44 -------

0 1 8

6 5 4

7 3 2

------ Current Step Cost: 4 - Search Cost: 75 - fringes Size: 31 - Explored Size: 45 -------

5 0 8

1 3 4

6 7 2

------ Current Step Cost: 3 - Search Cost: 76 - fringes Size: 31 - Explored Size: 46 -------

1 4 5

0 3 8

6 7 2

------ Current Step Cost: 7 - Search Cost: 78 - fringes Size: 32 - Explored Size: 47 -------

1 4 0

3 8 5

6 7 2

------ Current Step Cost: 8 - Search Cost: 80 - fringes Size: 33 - Explored Size: 47 -------

1 5 0

6 4 8

7 3 2

------ Current Step Cost: 4 - Search Cost: 80 - fringes Size: 32 - Explored Size: 48 -------

0 1 4

3 8 5

6 7 2

------ Current Step Cost: 8 - Search Cost: 81 - fringes Size: 32 - Explored Size: 49 -------

1 0 5

6 4 8

7 3 2

------ Current Step Cost: 5 - Search Cost: 82 - fringes Size: 32 - Explored Size: 50 -------

0 1 5

6 4 8

7 3 2

------ Current Step Cost: 6 - Search Cost: 84 - fringes Size: 33 - Explored Size: 51 -------

3 1 8

5 7 4

6 0 2

------ Current Step Cost: 7 - Search Cost: 85 - fringes Size: 33 - Explored Size: 52 -------

6 1 5

0 4 8

7 3 2

------ Current Step Cost: 7 - Search Cost: 87 - fringes Size: 34 - Explored Size: 53 -------

3 1 4

0 8 5

6 7 2

------ Current Step Cost: 9 - Search Cost: 89 - fringes Size: 35 - Explored Size: 54 -------

3 1 8

5 4 2

6 0 7

------ Current Step Cost: 9 - Search Cost: 91 - fringes Size: 36 - Explored Size: 55 -------

1 8 0

6 5 4

7 3 2

------ Current Step Cost: 4 - Search Cost: 93 - fringes Size: 37 - Explored Size: 56 -------

1 8 0

3 5 2

6 4 7

------ Current Step Cost: 8 - Search Cost: 94 - fringes Size: 37 - Explored Size: 57 -------

5 3 8

1 0 4

6 7 2

------ Current Step Cost: 4 - Search Cost: 95 - fringes Size: 37 - Explored Size: 58 -------

1 8 2

3 5 0

6 4 7

------ Current Step Cost: 9 - Search Cost: 98 - fringes Size: 39 - Explored Size: 59 -------

5 3 8

1 4 0

6 7 2

------ Current Step Cost: 5 - Search Cost: 100 - fringes Size: 40 - Explored Size: 60 -------

1 8 2

3 0 5

6 4 7

------ Current Step Cost: 10 - Search Cost: 102 - fringes Size: 41 - Explored Size: 61 -------

5 3 8

1 4 2

6 7 0

------ Current Step Cost: 6 - Search Cost: 105 - fringes Size: 43 - Explored Size: 62 -------

1 4 5

6 0 8

7 3 2

------ Current Step Cost: 6 - Search Cost: 106 - fringes Size: 43 - Explored Size: 63 -------

3 0 8

5 1 4

6 7 2

------ Current Step Cost: 7 - Search Cost: 109 - fringes Size: 45 - Explored Size: 64 -------

1 5 8

0 7 4

3 6 2

------ Current Step Cost: 5 - Search Cost: 111 - fringes Size: 46 - Explored Size: 65 -------

1 5 8

3 7 0

6 2 4

------ Current Step Cost: 5 - Search Cost: 113 - fringes Size: 47 - Explored Size: 66 -------

3 0 5

4 1 8

6 7 2

------ Current Step Cost: 9 - Search Cost: 115 - fringes Size: 48 - Explored Size: 67 -------

5 3 8

0 1 4

6 7 2

------ Current Step Cost: 5 - Search Cost: 117 - fringes Size: 49 - Explored Size: 68 -------

1 5 8

3 2 0

6 4 7

------ Current Step Cost: 7 - Search Cost: 119 - fringes Size: 50 - Explored Size: 69 -------

3 0 1

5 4 8

6 7 2

------ Current Step Cost: 9 - Search Cost: 121 - fringes Size: 51 - Explored Size: 70 -------

3 1 5

4 7 8

6 0 2

------ Current Step Cost: 9 - Search Cost: 123 - fringes Size: 52 - Explored Size: 71 -------

5 3 0

1 4 8

6 7 2

------ Current Step Cost: 6 - Search Cost: 125 - fringes Size: 53 - Explored Size: 72 -------

1 4 5

3 8 2

6 0 7

------ Current Step Cost: 9 - Search Cost: 126 - fringes Size: 53 - Explored Size: 73 -------

1 0 2

3 8 5

6 4 7

------ Current Step Cost: 11 - Search Cost: 128 - fringes Size: 54 - Explored Size: 74 -------

1 8 2

3 4 5

6 0 7

------ Current Step Cost: 11 - Search Cost: 130 - fringes Size: 55 - Explored Size: 75 -------

3 1 5

4 8 0

6 7 2

------ Current Step Cost: 9 - Search Cost: 132 - fringes Size: 56 - Explored Size: 76 -------

1 8 2

3 4 5

6 7 0

------ Current Step Cost: 12 - Search Cost: 134 - fringes Size: 57 - Explored Size: 77 -------

3 1 5

4 8 2

6 7 0

------ Current Step Cost: 10 - Search Cost: 135 - fringes Size: 57 - Explored Size: 78 -------

1 5 8

0 3 2

6 4 7

------ Current Step Cost: 7 - Search Cost: 136 - fringes Size: 57 - Explored Size: 79 -------

1 4 5

6 3 8

7 0 2

------ Current Step Cost: 7 - Search Cost: 138 - fringes Size: 58 - Explored Size: 80 -------

3 1 5

6 4 8

7 0 2

------ Current Step Cost: 9 - Search Cost: 140 - fringes Size: 59 - Explored Size: 81 -------

0 4 5

1 3 8

6 7 2

------ Current Step Cost: 8 - Search Cost: 142 - fringes Size: 60 - Explored Size: 82 -------

1 8 4

3 5 2

6 0 7

------ Current Step Cost: 7 - Search Cost: 143 - fringes Size: 60 - Explored Size: 83 -------

1 8 4

0 3 5

6 7 2

------ Current Step Cost: 7 - Search Cost: 145 - fringes Size: 61 - Explored Size: 84 -------

3 1 8

6 5 4

7 0 2

------ Current Step Cost: 7 - Search Cost: 147 - fringes Size: 62 - Explored Size: 85 -------

1 5 0

3 7 8

6 2 4

------ Current Step Cost: 6 - Search Cost: 149 - fringes Size: 63 - Explored Size: 86 -------

3 1 8

0 5 2

6 4 7

------ Current Step Cost: 9 - Search Cost: 150 - fringes Size: 63 - Explored Size: 87 -------

1 0 5

3 7 8

6 2 4

------ Current Step Cost: 7 - Search Cost: 152 - fringes Size: 64 - Explored Size: 88 -------

0 3 8

5 1 4

6 7 2

------ Current Step Cost: 6 - Search Cost: 154 - fringes Size: 65 - Explored Size: 89 -------

0 1 5

3 7 8

6 2 4

------ Current Step Cost: 8 - Search Cost: 154 - fringes Size: 64 - Explored Size: 90 -------

1 5 0

3 2 8

6 4 7

------ Current Step Cost: 8 - Search Cost: 155 - fringes Size: 64 - Explored Size: 91 -------

1 4 5

3 7 8

6 2 0

------ Current Step Cost: 8 - Search Cost: 156 - fringes Size: 64 - Explored Size: 92 -------

1 0 5

3 2 8

6 4 7

------ Current Step Cost: 9 - Search Cost: 157 - fringes Size: 64 - Explored Size: 93 -------

1 4 5

3 7 0

6 2 8

------ Current Step Cost: 9 - Search Cost: 159 - fringes Size: 65 - Explored Size: 94 -------

1 2 5

3 0 8

6 4 7

------ Current Step Cost: 10 - Search Cost: 161 - fringes Size: 66 - Explored Size: 95 -------

0 1 5

3 2 8

6 4 7

------ Current Step Cost: 10 - Search Cost: 164 - fringes Size: 68 - Explored Size: 96 -------

1 4 0

3 7 5

6 2 8

------ Current Step Cost: 10 - Search Cost: 165 - fringes Size: 68 - Explored Size: 97 -------

1 2 5

3 4 8

6 0 7

------ Current Step Cost: 11 - Search Cost: 166 - fringes Size: 68 - Explored Size: 98 -------

1 8 4

3 7 5

6 0 2

------ Current Step Cost: 7 - Search Cost: 168 - fringes Size: 69 - Explored Size: 99 -------

1 2 5

3 4 8

6 7 0

------ Current Step Cost: 12 - Search Cost: 170 - fringes Size: 70 - Explored Size: 100 -------

1 5 8

0 4 2

3 6 7

------ Current Step Cost: 7 - Search Cost: 171 - fringes Size: 70 - Explored Size: 101 -------

1 2 5

3 4 0

6 7 8

------ Current Step Cost: 13 - Search Cost: 173 - fringes Size: 71 - Explored Size: 102 -------

1 4 5

3 0 2

6 8 7

------ Current Step Cost: 10 - Search Cost: 175 - fringes Size: 72 - Explored Size: 103 -------

1 2 0

3 4 5

6 7 8

------ Current Step Cost: 14 - Search Cost: 178 - fringes Size: 74 - Explored Size: 104 -------

1 0 5

3 4 2

6 8 7

------ Current Step Cost: 11 - Search Cost: 179 - fringes Size: 74 - Explored Size: 105 -------

1 0 2

3 4 5

6 7 8

------ Current Step Cost: 15 - Search Cost: 181 - fringes Size: 75 - Explored Size: 106 -------

0 1 5

3 4 2

6 8 7

------ Current Step Cost: 12 - Search Cost: 183 - fringes Size: 76 - Explored Size: 107 -------

0 1 2

3 4 5

6 7 8

------ Current Step Cost: 16 - Search Cost: 184 - fringes Size: 76 - Explored Size: 108 -------

----------- GOAL FOUND AT SEARCH COST OF 184------------

--------------- FINISHED H2 -------------------

Solved With H1

Depth: 16 - Search Cost: 842 - Fringe Size: 325 - Explored Set Size: 495 - Total Time: 45 ms

Solved Using H2

Depth: 16 - Search Cost: 183 - Fringe Size: 76 - Explored Set Size: 106 - Total Time: 3 ms

d | Total Cases | Search Cost H1 | Total Time H1 | Search Cost H2 | Total Time H2

16 | 1 | 842 | 45 | 183 | 3

Results from 1000 Random Puzzles

d | Total Cases | Search Cost H1 | Search Cost H2

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7 | 1 | 25 | 18

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8 | 1 | 24 | 17

------------------------------------------------------------------------

10 | 3 | 73 | 27

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11 | 3 | 133 | 58

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12 | 5 | 142 | 46

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13 | 9 | 241 | 66

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14 | 7 | 379 | 93

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15 | 15 | 650 | 135

------------------------------------------------------------------------

16 | 22 | 855 | 180

------------------------------------------------------------------------

17 | 24 | 1550 | 257

------------------------------------------------------------------------

18 | 57 | 2191 | 359

------------------------------------------------------------------------

19 | 64 | 3479 | 484

------------------------------------------------------------------------

20 | 94 | 5580 | 596

------------------------------------------------------------------------

21 | 98 | 8576 | 879

------------------------------------------------------------------------

22 | 137 | 12759 | 1107

------------------------------------------------------------------------

23 | 113 | 21637 | 1483

------------------------------------------------------------------------

24 | 117 | 28196 | 1987

------------------------------------------------------------------------

25 | 85 | 49467 | 3251

------------------------------------------------------------------------

26 | 75 | 59153 | 4613

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27 | 38 | 94457 | 6444

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28 | 24 | 118148 | 7401

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29 | 7 | 146692 | 9883

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30 | 1 | 178768 | 27642