Dijkstra's Algorithm

- 8 Connected Grid
- Cost for each move = c
- Cost represented in the bottom left of each cell. Format: cost(parent cell)
- Visited cells marked by a ✓ on top right.

|--|

0 – Start

INF – All other (Unvisited Set)

O	1	2	3	4	5	6	GOAL
8	9	10	11	12 INF	13	14 INF	15 INF
16	17	18	19	20 INF	21	22 INF	23
24 INF	25 INF	26 INF	27	28 INF	29 INF	30	31
32 INF	33 INF	34	35	36	37	38 INF	39 INF
START	41	42 INF	43 INF	44 INF	45 INF	46 INF	47

0 – Start

c - 32, 33,41

INF – All other (Unvisited Set)

0	1	2	3	4	5	6	GOAL
NF 8	9	10	11	12	13	14	15 INF
16	17	18	19	20	21	22	23
24	25 INF	26	27	28 INF	29 INF	30	31 INF
32	33	34	35	36	37	38 Inf	39 INF
START	41	42	43	44	45	46	47
0	INF, c(START)	INF	INF	INF	INF	INF	INF

ighbors of - START

rs – 32,33,41

Cur	ren	ıt (COS	sts

0 – Start

c - <mark>32</mark>, 33,41

2c – 24,25

INF – All other (Unvisited Set)

0	1	2	3	4	5	6	GOAL
INF	INF	INF	INF	INF	INF	INF	INF
8	9	10	11	12	13	14	15
				INF		INF	INF
16	17	18	19	20	21	22	23
				INF	INF	INF	
24	25	26	27	28	29	30	31
INF , 2c(32)	INF, 2c(32)	INF	INF	INF	INF		INF
32	33 $$	34	35	36	37	38	39
INF , c(START)	INF , c(START)					INF	INF
START	41	42	43	44	45	46	47
	74	72	10	1-1	70	10	"
0	INF, c(START)	INF	INF	INF	INF	INF	INF

eighbors of - 32 ors – 24,25

0	1	2	3	4	5	6	GOAL
INF	INF	INF	INF	INF	INF	INF	INF
8	9	10	11	12	13	14	15
				INF		INF	INF
16	17	18	19	20	21	22	23
				INF	INF	INF	
24	25	26	27	28	29	30	31
INF , 2c(32)	INF , 2c(32)	INF, 2c(33)	INF	INF	INF		INF
32 🗸	33 🔨	34	35	36	37	38	39
INF, c(START)	INF, c(START)					INF	INF
START	41 ~	42 ~	43	44	45	46	47
0	INF, c(START)	INF , 2c(33)	INF	INF	INF	INF	INF

0 – Start c – 32, 33,41 2c – 24,25,26,42 INF – All other (Unvisited Set)

ghbors of - 33 rs – 26,42

0	1	2	3	4	5	6	GOAL
INF	INF	INF	INF	INF	INF	INF	INF
8	9	10	11	12	13	14	15
16	17	18	19	20	21	22	23
24	25	26	27	28	29 INF	30	31 INF
32	33 INF, c(START)	34	35	36	37	38	39
START	41	42	43	44	45	46	47

0 – Start c – 32, 33,41 2c – 24,25,26,42 INF – All other (Unvisited Set)

ghbors of - 41

rs – None

0	1	2	3	4	5	6	GOAL
INF	INF	INF	INF	INF	INF	INF	INF
8	9	10	11	12	13	14	15
16	17	18	19	20	21	22	23
24	25	26	27	28	29 INF	30	31 INF
32	33 INF, c(START)	34	35	36	37	38	39
START	41	42	43	44	45	46	47

0 – Start c – 32, 33,41

2c - **24**,25,26,42

INF – All other (Unvisited Set)

ghbors of – 24

rs – None

O	1	2	3	4	5	6	GOAL
8	9	10	11	12 INF	13	14	15 INF
16	17	18	19	20 INF	21 INF	22	23
24 NF, 2c(32)	25	26	27	28 INF	29 INF	30	31 INF
32	33 √	34	35	36	37	38 INF	39 INF
START	41	42 (33)	43 INF	44 INF	45 INF	46 INF	47 INF

0 – Start c – 32, 33,41 2c – 24,25,26,42 INF – All other (Unvisited Set)

ghbors of – 25

rs – None

1	2	3	4	5	6	GOAL
INF	INF	INF	INF	INF	INF	INF
9	10	11	12	13	14	15
17	18	19	20 INF	21 INF	22 INF	23
25 INF, 2c(32)	26	27 VINE, 3c(26)	28 INF	29 INF	30	31 INF
33 √	34	35	36	37	38 INF	39 INF
41	42	43	44	45	46	47
	9 17 25 INF, 2c(32) 33	INF 9 10 17 18 25 26 INF, 2c(32) 1NF, 2c(33) 33 34 INF, c(START) 41 42 ✓	INF 9 10 11 17 18 19 25 26 27 INF, 2c(32) INF, 2c(33) INF, 3c(26) 33 34 35 INF, c(START) 41 42 43	INF 9 10 11 12 INF 17 18 19 20 INF 25 26 27 28 INF, 2c(32) INF, 2c(33) INF, 3c(26) INF 33 34 35 36 INF, c(START) 41 42 43 44	INF INF INF INF 9 10 11 12 13 17 18 19 20 21 INF INF INF 25 26 27 28 29 INF, 2c(32) INF, 2c(33) INF, 3c(26) INF INF 33 34 35 36 37 INF, c(START) 41 42 43 44 45	NF

0 – Start

c - 32, 33,41

2c - 24,25,<mark>26</mark>,42

3c - 27

INF – All other (Unvisited Set)

neighbors of - 26 pors – 27

0	1	2	3	4	5	6	GOAL
INF	INF	INF	INF	INF	INF	INF	INF
8	9	10	11	12	13	14	15
				INF		INF	INF
16	17	18	19	20	21	22	23
				INF	INF	INF	
24	25	26	27 🔨	28	29	30	31
INF , 2c(32)	INF , 2c(32)	INF , 2c(33)	INF , 3c(26)	INF	INF		INF
32 🗸	33	34	35	36	37	38	39
INF, c(START)	INF , c(START)					INF	INF
START	41	42 🔨	43 ~	44	45	46	47
0	INF, c(START)	INF , 2c(33)	INF , 3c(42)	INF	INF	INF	INF

0 – Start

c - 32, 33,41

2c - 24,25,26,<mark>42</mark>

3c - 27,43

INF – All other (Unvisited Set)

neighbors of - 42 pors – 43

0	1	2	3	4	5	6	GOAL
INF	INF	INF	INF	INF	INF	INF	INF
8	9	10	11	12	13	14	15
				INF		INF	INF
16	17	18	19	20 🔨	21	22	23
				INF , 4c(27)	INF	INF	
24	25	26 🔨	27 🔨	28	29	30	31
INF , 2c(32)	INF, 2c(32)	INF , 2c(33)	INF , 3c(26)	INF , 4c(27)	INF		INF
32 🗸	33 🔨	34	35	36	37	38	39
INF, c(START)	INF, c(START)					INF	INF
START	41	42 🔨	43 🔨	44	45	46	47
0	INF , c(START)	INF, 2c(33)	INF , 3c(42)	INF	INF	INF	INF

0 – Start

c - 32, 33,41

2c - 24,25,26,42

3c - 27,43

4c – 20,28

INF – All other (Unvisited Set)

neighbors of - 27 pors – 20,28

0	1	2	3	4	5	6	GOAL
INF	INF	INF	INF	INF	INF	INF	INF
8	9	10	11	12	13	14	15
				INF		INF	INF
16	17	18	19	20 🔨	21	22	23
				INF , 4c(27)	INF	INF	
24	25	26 🔨	27 🔨	28	29	30	31
INF , 2c(32)	INF , 2c(32)	INF , 2c(33)	INF , 3c(26)	INF , 4c(27)	INF		INF
32 🗸	33 🗸	34	35	36	37	38	39
INF, c(START)	INF, c(START)					INF	INF
START	41	42 🔨	43 🔨	44 🔨	45	46	47
0	INF, c(START)	INF , 2c(33)	INF , 3c(42)	INF , 4c(43)	INF	INF	INF

0 – Start

c - 32, 33,41

2c - 24,25,26,42

3c - 27,43

4c - 20,28,44

INF – All other (Unvisited Set)

neighbors of - 43 pors – 44

O	1	2	3	4	5	6	GOAL
8	9	10	11	12 NF, 5c(20)	13	14 INF	15 INF
16	17	18	19	20 VINE, 4c(27)	21 NNF, 5c(20)	22 INF	23
24	25	26 INF, 2c(33)	27 ·	28 INF, 4c(27)	29 (INF, 5c(20)	30	31 INF
32	33 √	34	35	36	37	38 INF	39 INF
START	41	42 ····································	43 HNF, 3c(42)	44 ·	45	46 INF	47 INF

0 – Start

c - 32, 33,41

2c - 24,25,26,42

3c - 27,43

4c - 20,28,44

5c - 12,21,29

INF – All other (Unvisited Set)

neighbors of - 20 pors – 12,21,29

O	1	2	3	4	5	6	GOAL
8	9	10	11	12 ·	13	14 INF	15 INF
16	17	18	19	20	21 ×	22	23
24	25	26	27 NHF, 3c(26)	28 INF, 4c(27)	29 (INF, 5c(20)	30	31 INF
32	33 INF, c(START)	34	35	36	37	38	39 INF
START	41	42 NF, 2c(33)	43 ···NF, 3c(42)	44 INF, 4c(43)	45	46	47 INF

0 – Start

c - 32, 33,41

2c - 24,25,26,42

3c - 27,43

4c - 20,<mark>28</mark>,44

5c - 12,21,29

INF – All other (Unvisited Set)

neighbors of - 28 pors – None

0	1	2	3	4	5	6	GOAL
INF	INF	INF	INF	INF	INF	INF	INF
8	9	10	11	12 🔨	13	14	15
				INF , 5c(20)		INF	INF
16	17	18	19	20 🗸	21 🔨	22	23
				INF , 4c(27)	INF , 5c(20)	INF	
24	25	26	27 🔨	28 🔨	29 🔨	30	31
INF , 2c(32)	INF , 2c(32)	INF , 2c(33)	INF , 3c(26)	INF , 4c(27)	INF , 5c(20)		INF
32 🔨	33 🗸	34	35	36	37	38	39
INF, c(START)	INF , c(START)					INF	INF
START	41	42 ~	43 ~	44 🔨	45 ~	46	47
0	INF, c(START)	INF , 2c(33)	INF , 3c(42)	INF, 4c(43)	INF , 5c(44)	INF	INF

0 – Start

c - 32, 33,41

2c - 24,25,26,42

3c - 27,43

4c - 20,28,44

5c - 12,21,29,45

INF – All other (Unvisited Set)

neighbors of - 44

ors – 45

0	1	2	3 ~	4	5	6	GOAL
8	9	10	11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	12 12	13	14	15
16	17	18	19	1NF, 5c(20) ✓	21	1NF 22	23
24	25	26	27	1NF, 4c(27)	1NF, 5c(20)	30	31
INF, 2c(32) ✓	INF, 2c(32)	INF, 2c(33)	INF , 3c(26)	INF , 4c(27)	INF , 5c(20)		INF
32	inf, c(start)	34	35	36	37	38 INF	39 INF
START	41	42	43 INF, 3c(42)	44 VINE, 4c(43)	45	46	47 INF

0 – Start

c - 32, 33,41

2c - 24,25,26,42

3c - 27,43

4c - 20,28,44

5c – **12**,21,29,45

6c - 3,4,5

INF – All other (Unvisited Set)

neighbors of - 12 pors – 3,4,5

0	1	2	3 ~	4	5	6	GOAL
8	9	10	11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	12 12	13	14	15
16	17	18	19	1NF, 5c(20)	21	1NF, 6c(21)	23
24	25	26	27 🗸	1NF, 4c(27)	1NF, 5c(20)	1NF, 6c(21)	31
INF, 2c(32)	INF, 2c(32)	INF, 2c(33)	INF , 3c(26)	INF , 4c(27)	INF , 5c(20)		INF
32	33	34	35	36	37	38 INF	39 INF
START	41	42	43	44 V	45	46	47

0 – Start

c - 32, 33, 41

2c - 24,25,26,42

3c - 27,43

4c - 20,28,44

5c – 12,<mark>21</mark>,29,45

6c - 3,4,5,14,22

INF – All other (Unvisited Set)

neighbors of - 21 pors – 14,22

0	1	2	3 ~	4	5	6	GOAL
INF	INF	INF	INF , 6c(12)	INF , 6c(12)	INF , 6c(12)	INF	INF
8	9	10	11	12 🔨	13	14	15
				INF , 5c(20)		INF , 6c(21)	INF
16	17	18	19	20 🔨	21	22 🔨	23
				INF , 4c(27)	INF , 5c(20)	INF , 6c(21)	
24	25	26	27 🔨	28 🔨	29 🔨	30	31
INF , 2c(32)	INF , 2c(32)	INF, 2c(33)	INF , 3c(26)	INF , 4c(27)	INF , 5c(20)		INF
32 🗸	33 🔨	34	35	36	37	38	39
INF, c(START)	INF, c(START)					INF , 6c(29)	INF
START	41 ~	42 🔨	43 🔨	44 🔨	45 ~	46	47
0	INF, c(START)	INF , 2c(33)	INF , 3c(42)	INF , 4c(43)	INF , 5c(44)	INF	INF

0 – Start

c - 32, 33, 41

2c - 24,25,26,42

3c - 27,43

4c - 20,28,44

5c - 12,21,<mark>29</mark>,45

6c - 3,4,5,14,22,38

INF – All other (Unvisited Set)

neighbors of - 29

oors – 38

0	1	2	3 ~	4	5	6	GOAL
INF	INF	INF	INF , 6c(12)	INF , 6c(12)	INF , 6c(12)	INF	INF
8	9	10	11	12 🔨	13	14	15
				INF , 5c(20)		INF, 6c(21)	INF
16	17	18	19	20 🔨	21	22 🔨	23
				INF , 4c(27)	INF, 5c(20)	INF, 6c(21)	
24	25	26	27 🔨	28 (29 (30	31
INF , 2c(32)	INF, 2c(32)	INF , 2c(33)	INF , 3c(26)	INF , 4c(27)	INF , 5c(20)		INF
32 🗸	33 🔨	34	35	36	37	38	39
INF, c(START)	INF, c(START)					INF , 6c(29)	INF
START	41	42	43 (44 🔨	45	46	47
0	INF, c(START)	INF , 2c(33)	INF , 3c(42)	INF , 4c(43)	INF , 5c(44)	INF, 6c(45)	INF

0 – Start

c - 32, 33, 41

2c - 24,25,26,42

3c - 27,43

4c - 20,28,44

5c - 12,21,29,<mark>45</mark>

6c - 3,4,5,14,22,38,46

INF – All other (Unvisited Set)

neighbors of - 45 pors – 46

0	1	2	3 ~	4	5	6	GOAL
INF	INF	INF , 7c(3)	INF , 6c(12)	INF , 6c(12)	INF , 6c(12)	INF	INF
8	9	10	11	12 🔨	13	14	15
				INF , 5c(20)		INF , 6c(21)	INF
16	17	18	19	20 🔨	21 🔨	22 🔨	23
				INF , 4c(27)	INF , 5c(20)	INF , 6c(21)	
24	25	26	27 🔨	28 🔨	29 🔨	30	31
INF , 2c(32)	INF , 2c(32)	INF , 2c(33)	INF , 3c(26)	INF , 4c(27)	INF , 5c(20)		INF
32 🗸	33 🗸	34	35	36	37	38 🔨	39
INF, c(START)	INF, c(START)					INF , 6c(29)	INF
START	41 ~	42 🔨	43 🔨	44 🔨	45 (46	47
0	INF, c(START)	INF , 2c(33)	INF , 3c(42)	INF , 4c(43)	INF , 5c(44)	INF, 6c(45)	INF

0 – Start

c - 32, 33, 41

2c - 24,25,26,42

3c - 27,43

4c - 20,28,44

5c - 12,21,29,45

6c - 3,4,5,14,22,38,46

7c - 2

INF – All other (Unvisited Set)

neighbors of - 3

oors – 2

0	1	2	3 ~	4	5	6	GOAL
INF	INF	INF , 7c(3)	INF, 6c(12)	INF , 6c(12)	INF , 6c(12)	INF	INF
8	9	10	11	12 🔨	13	14	15
				INF , 5c(20)		INF , 6c(21)	INF
16	17	18	19	20 🔨	21 🔨	22 🔨	23
				INF , 4c(27)	INF , 5c(20)	INF , 6c(21)	
24	25	26	27 🔨	28 🔨	29	30	31
INF , 2c(32)	INF , 2c(32)	INF , 2c(33)	INF , 3c(26)	INF , 4c(27)	INF , 5c(20)		INF
32 🗸	33 🗸	34	35	36	37	38 🔨	39
INF, c(START)	INF , c(START)					INF , 6c(29)	INF
START	41 ~	42 🔨	43 🔨	44 🔨	45 ~	46	47
0	INF, c(START)	INF , 2c(33)	INF , 3c(42)	INF , 4c(43)	INF , 5c(44)	INF , 6c(45)	INF

0 – Start

c - 32, 33, 41

2c - 24,25,26,42

3c - 27,43

4c - 20,28,44

5c - 12,21,29,45

6c - 3,4,5,14,22,38,46

7c - 2

INF – All other (Unvisited Set)

neighbors of - 4 pors – None

0	1	2	3 ~	4	5	6	GOAL
INF	INF	INF , 7c(3)	INF , 6c(12)	INF , 6c(12)	INF , 6c(12)	INF , 7c(5)	INF
8	9	10	11	12 🔨	13	14	15
				INF , 5c(20)		INF , 6c(21)	INF
16	17	18	19	20 🔨	21	22 🔨	23
				INF , 4c(27)	INF , 5c(20)	INF , 6c(21)	
24	25	26	27 🔨	28 (29 🔨	30	31
INF , 2c(32)	INF , 2c(32)	INF , 2c(33)	INF , 3c(26)	INF , 4c(27)	INF, 5c(20)		INF
32 🗸	33 🔨	34	35	36	37	38 🔨	39
INF, c(START)	INF, c(START)					INF , 6c(29)	INF
START	41	42	43 (44 🔨	45	46	47
0	INF, c(START)	INF , 2c(33)	INF , 3c(42)	INF , 4c(43)	INF , 5c(44)	INF , 6c(45)	INF

0 – Start

c - 32, 33, 41

2c - 24,25,26,42

3c - 27,43

4c - 20,28,44

5c - 12,21,29,45

6c - 3,4,<mark>5</mark>,14,22,38,46

7c - 2,6

INF – All other (Unvisited Set)

neighbors of - 5

oors – 6

Visited Set – {START,32,33,41,24,25,26,42,27,43,20,28,44,12,21,29,45,3,4,5,14,22,38,46,2,6,GOAL,15}

Although we have added GOAL to our visited set, its still not the least cost in the stack so we have to keep going until we can be sure that this is the least path and GOAL is the next point we chose.

0	1	2	3 ~	4	5	6	GOAL
INF	INF	INF , 7c(3)	INF , 6c(12)	INF , 6c(12)	INF , 6c(12)	INF , 7c(5)	INF , 7c(14)
8	9	10	11	12 🔨	13	14 ′	15 🔨
				INF , 5c(20)		INF, 6c(21)	INF , 7c(14)
16	17	18	19	20 🔨	21	22 🔨	23
				INF , 4c(27)	INF , 5c(20)	INF , 6c(21)	
24	25	26	27 🔨	28 (29 🔨	30	31
INF , 2c(32)	INF, 2c(32)	INF , 2c(33)	INF , 3c(26)	INF , 4c(27)	INF , 5c(20)		INF
32 🗸	33 🔨	34	35	36	37	38 🔨	39
INF, c(START)	INF, c(START)					INF , 6c(29)	INF
START	41	42	43 (44 🔨	45	46	47
0	INF, c(START)	INF , 2c(33)	INF , 3c(42)	INF , 4c(43)	INF , 5c(44)	INF , 6c(45)	INF

Current costs

0 – Start

c - 32, 33, 41

2c - 24,25,26,42

3c - 27,43

4c - 20,28,44

5c - 12,21,29,45

6c - 3,4,5,<mark>14</mark>,22,38,46

7c – 2,6, GOAL,15

INF – All other (Unvisited Set)

neighbors of - 14 pors – GOAL,15

0	1	2 1	3 ~	4	5	6	GOAL
8	9	10	1NF, 6c(12)	12 12	13	14 ×	15
				INF , 5c(20)		INF, 6c(21)	INF , 7c(14)
16	17	18	19	20	21	22 *	23
				INF, 4c(27)	INF, 5c(20)	INF, 6c(21)	
24	25	26	27 🔨	28	29	30	31 🔨
INF , 2c(32)	INF, 2c(32)	INF , 2c(33)	INF , 3c(26)	INF , 4c(27)	INF , 5c(20)		INF , 7c(22)
32 🗸	33 🗸	34	35	36	37	38 🔨	39
INF, c(START)	INF , c(START)					INF , 6c(29)	INF
START	41	42	43 🔨	44 🔨	45	46	47
0	INF, c(START)	INF , 2c(33)	INF , 3c(42)	INF , 4c(43)	INF , 5c(44)	INF , 6c(45)	INF

0 – Start

c - 32, 33, 41

2c - 24,25,26,42

3c - 27,43

4c - 20,28,44

5c - 12,21,29,45

6c - 3,4,5,14,<mark>22</mark>,38,46

7c – 2,6, GOAL,15,31

INF – All other (Unvisited Set)

neighbors of - 22

oors – 31

0	1	2	3 ~	4	5	6	GOAL
INF	INF	INF , 7c(3)	INF , 6c(12)	INF , 6c(12)	INF , 6c(12)	INF , 7c(5)	INF , 7c(14)
8	9	10	11	12 🔨	13	14 (15
				INF , 5c(20)		INF, 6c(21)	INF , 7c(14)
16	17	18	19	20 🔨	21	22 🔨	23
				INF , 4c(27)	INF , 5c(20)	INF , 6c(21)	
24	25	26	27 🔨	28 ′	29 (30	31 🔨
INF, 2c(32)	INF, 2c(32)	INF, 2c(33)	INF , 3c(26)	INF , 4c(27)	INF , 5c(20)		INF , 7c(22)
32 🗸	33 🔨	34	35	36	37	38 (39 🔨
INF, c(START)	INF, c(START)					INF , 6c(29)	INF, 7c(38)
START	41	42	43 (44 🔨	45	46	47
0	INF, c(START)	INF , 2c(33)	INF , 3c(42)	INF , 4c(43)	INF , 5c(44)	INF, 6c(45)	INF , 7c(38)

0 – Start

c - 32, 33, 41

2c - 24,25,26,42

3c - 27,43

4c - 20,28,44

5c - 12,21,29,45

6c - 3,4,5,14,22,<mark>38</mark>,46

7c – 2,6, GOAL,15,31,39,47

INF – All other (Unvisited Set)

neighbors of - 38 pors – 39,47

0	1	2	3 ~	4	5	6	GOAL
INF	INF	INF , 7c(3)	INF , 6c(12)	INF , 6c(12)	INF , 6c(12)	INF , 7c(5)	INF , 7c(14)
8	9	10	11	12 🔨	13	14 (15
				INF , 5c(20)		INF, 6c(21)	INF , 7c(14)
16	17	18	19	20 🔨	21	22 🔨	23
				INF , 4c(27)	INF , 5c(20)	INF , 6c(21)	
24	25	26	27 🔨	28 ′	29 (30	31 🔨
INF, 2c(32)	INF, 2c(32)	INF, 2c(33)	INF , 3c(26)	INF , 4c(27)	INF , 5c(20)		INF , 7c(22)
32 🗸	33 🔨	34	35	36	37	38 (39 🔨
INF, c(START)	INF, c(START)					INF , 6c(29)	INF, 7c(38)
START	41	42	43 (44 🔨	45	46	47
0	INF, c(START)	INF , 2c(33)	INF , 3c(42)	INF , 4c(43)	INF , 5c(44)	INF, 6c(45)	INF , 7c(38)

0 – Start

c - 32, 33, 41

2c - 24,25,26,42

3c - 27,43

4c - 20,28,44

5c - 12,21,29,45

6c - 3,4,5,14,22,38,<mark>46</mark>

7c – 2,6, GOAL,15,31,39,47

INF – All other (Unvisited Set)

neighbors of - 46 pors – None Visited Set – {START,32,33,41,24,25,26,42,27,43,20,28,44,12,21,29,45,3,4,5,14,22,38,46,2,6,GOAL,15,31,39,47}
Path 1 – {START,33,26,27,20,21,14,GOAL}, Cost – 7c

Next we can pick GOAL as our next point in the stack since the least cost right now is 7c.

0	1	2	3 ~	4	5	6	GOAL
INF	INF	INF , 7c(3)	INF , 6c(12)	INF, 6c(12)	INF , 6c(12)	INF , 7c(5)	JI4F , 7c(14)
8	9	10	11	12 🔨	13	14	15
				INF , 5c(20)		₩, 6c(21)	INF , 7c(14)
16	17	18	19	20 (21	22 🔨	23
				INF, 4c(27)	INF, 5c(20)	INF , 6c(21)	
24	25	26	27	28	29	30	31 🔨
INF , 2c(32)	INF, 2c(32)	MF , 2c(33)	INF , 3c(26)	INF , 4c(27)	INF , 5c(20)		INF , 7c(22)
32 🗸	33	34	35	36	37	38 🔍	39 🔨
INF, c(START)	₩ F , c(START)					INF , 6c(29)	INF , 7c(38)
START	41	42 ~	43 (44 🔨	45	46	47 🔨
0	INF, c(START)	INF , 2c(33)	INF , 3c(42)	INF, 4c(43)	INF , 5c(44)	INF, 6c(45)	INF , 7c(38)

Current costs

0 – Start

c - 32, 33, 41

2c - 24,25,26,42

3c - 27,43

4c - 20,28,44

5c – 12,<mark>21</mark>,29,45

6c - 3,4,5,14,22,38,46

7c – 2,6, GOAL,15,31,39,47

INF – All other (Unvisited Set)