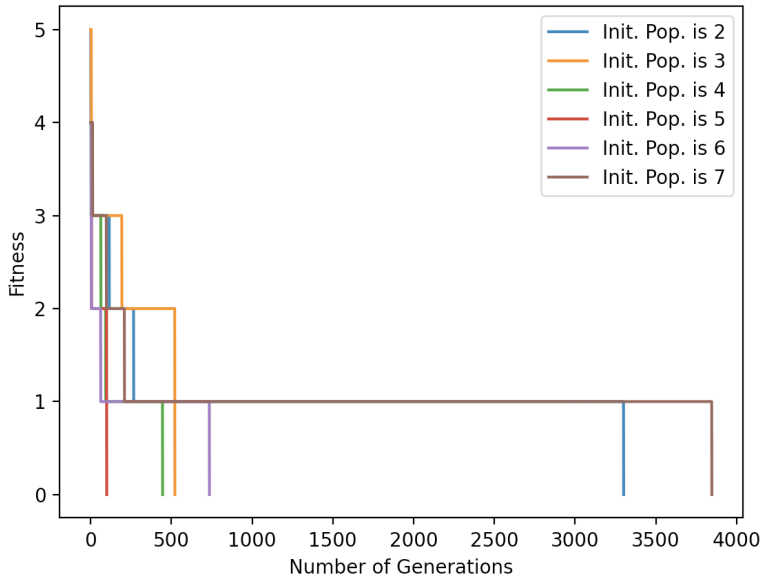
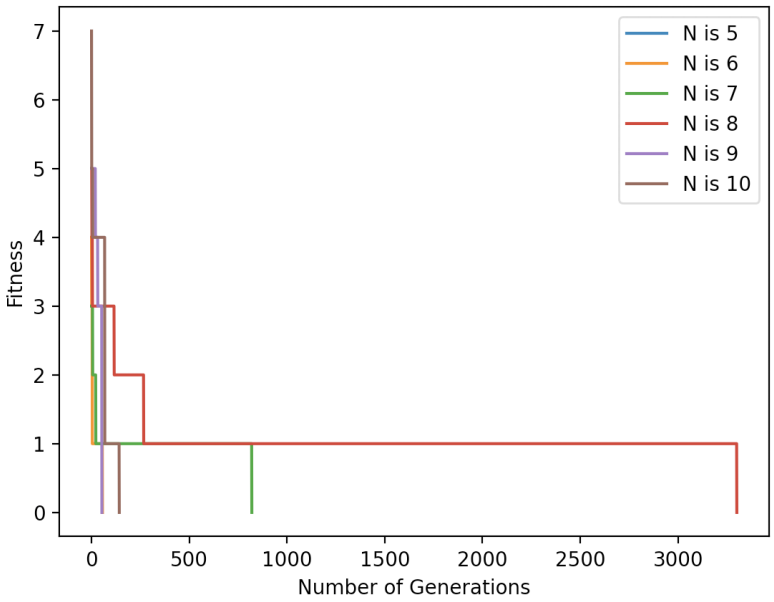
Q1:
All 4 algorithms were ran on same puzzle generated with seed 0.

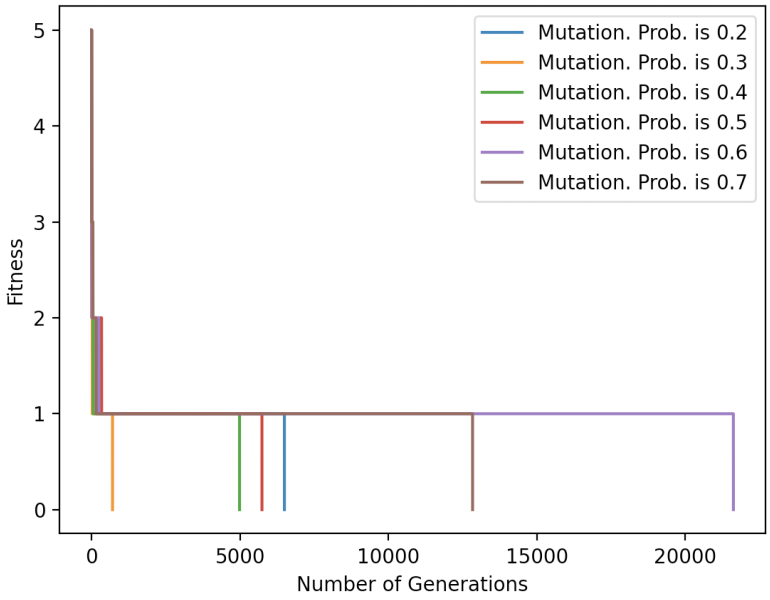
	Exploration Cost	**Time(in seconds)**	**Memory(Max Stack Length)**	**Path Cost**	**Path Length**
BFS	340	12.12	10	90	18
DFS	275	9.92	33	210	42
VCS	180	12.012	8	45	18
A-Star	166	11.59	7	45	18

BFS is optimal and complete
DFS is not optimal and not complete
VCS is optimal and complete
A star is optimal and complete

Q2


Init. Pop. is 2
Init. Pop. is 3
Init. Pop. is 4
Init. Pop. is 5
Init. Pop. is 6
Init. Pop. is 7
Fitness
Number of Generations
0
1
2
3
4
5
0
500
1000
1500
2000
2500
3000
3500
4000


N is 5
N is 6
N is 7
N is 8
N is 9
N is 10
Fitness
Number of Generations
0
1
2
3
4
5
6
7
0
500
1000
1500
2000
2500
3000



Q3 (c)

	Backtracking with CP	**Min Conflict**
Time Complexity	O(9^(n*n))	Probabilistic algorithm cant be defined
Space Complexity	O((n*n))	O((n*n))

	Backtracking with CP			**Min Conflict**		
	Total Clock Time(sec)	**Total Search Time(sec)**	**Number of Nodes Generated**	**Total Clock Time(sec)**	**Total Search Time(sec)**	**Number of Nodes Generated**
Test Case 1	0.134	0.132	1035	3156.06	3156.059	7953480
Test Case 2	0.0088	0.0074	80	281.38	281.39	622686
Test Case	0.012	0.011	80	31.534	31.535	81908

3						
Test Case 4	0.0169	0.0134	80	250.35	250.36	414942
Test Case 5	0.0125	0.0099	80	19.567	19.568	27208

(d)
Test Case 1: None found
Test Case 2: POWDERING
Test Case 3: None found
Test Case 4: None found
Test Case 5: None found