

Selection Table

Rank	Individual	Fitness Score
1	{1,5,2,6}	1672.39
2	{4,3,6,3}	1546.67
3	{1, 2, 4, 3}	1416.67
4	{2,4,2,4}	1180

Crossover Table

Rank	Individual	Fitness Score
1	{1, 5, 6, 3}	1671.18
2	{4, 3, 2, 6}	1566.67
3	{1, 2, 2, 4}	1250.00
4	{2, 4, 4, 3}	1233.33

Mutation Table

Rank In Crossover	Mutation Array	(Mutated) Individual	Fitness Score
1	[6, 1]	{6, 5, 6, 3}	1520
2	None	{4, 3, 2, 6}	1566.67
3	None	{1, 2, 2, 4}	1250
4	[2, 3]	{2, 4, 2, 3}	1330

3.B.1

Both answers could be correct under different settings. Points are rewarded for all answers.

It is still good to know that Local Beam Search are observed to be more likely to converge to local optimums under certain conditions, as stated in the textbook (AIMA 3rd).

3.B.2

3.B.2 What are the possible optimizations that could be made to the Genetic Algorithm, in case there will be many local optima? Check all that apply. (3 points)

- ☒ Selection of more diverse initial population
- ☐ Make the individuals more consistent by reducing the chance of mutation
- ☒ Run parallel Genetic Algorithms with different settings of crossover points
- ☐ None of the above