**Quiz # 3: Student ID: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: 11/10/2019**

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

1. When and where we use heuristics? Write to the point.
2. Write heuristics function for slide puzzle (also known as 8-puzzle), you function should have complete steps for finding the utility or heuristics of state using Manhattan distance formula.
3. Complete following table

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Algorithm Name | Complete? | Optimal? | Time Complexity | Space Complexity |
| Hit and Trial |  |  |  |  |
| BFS |  |  |  |  |
| DFS |  |  |  |  |
| UCS |  |  |  |  |
| A\* |  |  |  |  |
| Greedy BFS |  |  |  |  |