Question1:
By command "python2 pacman.py -l tinyMaze -p SearchAgent -a fn=tinyMazeSearch"
We get:
Path found with total cost of 8 in 0.0 seconds
Search nodes expanded: 0
Pacman emerges victorious! Score: 502
Average Score: 502.0
Scores: 502.0
Win Rate: 1/1 (1.00)
Record: Win

By command "python2 pacman.py -l tinyMaze -p SearchAgent"
We get:
[SearchAgent] using function depthFirstSearch
[SearchAgent] using problem type PositionSearchProblem
Path found with total cost of 10 in 0.0 seconds
Search nodes expanded: 15
Pacman emerges victorious! Score: 500
Average Score: 500.0
Scores: 500.0
Win Rate: 1/1 (1.00)
Record: Win

By command "python2 pacman.py -l mediumMaze -p SearchAgent"
[SearchAgent] using function depthFirstSearch
[SearchAgent] using problem type PositionSearchProblem
Path found with total cost of 130 in 0.0 seconds
Search nodes expanded: 146
Pacman emerges victorious! Score: 380
Average Score: 380.0
Scores: 380.0
Win Rate: 1/1 (1.00)
Record: Win

By command "python2 pacman.py -l bigMaze -z .5 -p SearchAgent"
[SearchAgent] using function depthFirstSearch
[SearchAgent] using problem type PositionSearchProblem
Path found with total cost of 210 in 0.0 seconds
Search nodes expanded: 390
Pacman emerges victorious! Score: 300
Average Score: 300.0
Scores: 300.0
Win Rate: 1/1 (1.00)
Record: Win

Question2:
By command "python2 pacman.py -l mediumMaze -p SearchAgent -a fn=bfs"
[SearchAgent] using function bfs
[SearchAgent] using problem type PositionSearchProblem
Path found with total cost of 68 in 0.0 seconds
Search nodes expanded: 269
Pacman emerges victorious! Score: 442
Average Score: 442.0
Scores: 442.0
Win Rate: 1/1 (1.00)

Record: Win

By command "python2 pacman.py -l bigMaze -p SearchAgent -a fn=bfs -z .5"
[SearchAgent] using function bfs
[SearchAgent] using problem type PositionSearchProblem
Path found with total cost of 210 in 0.0 seconds
Search nodes expanded: 620
Pacman emerges victorious! Score: 300
Average Score: 300.0
Scores: 300.0
Win Rate: 1/1 (1.00)
Record: Win

By command "python2 eightpuzzle.py"
A random puzzle:

| 1 | 4 | 2 |

| 3 | 5 | 8 |

| 6 | | 7 |

BFS found a path of 5 moves: ['right', 'up', 'left', 'up', 'left']
After 1 move: right

| 1 | 4 | 2 |

| 3 | 5 | 8 |

| 6 | 7 | |

Press return for the next state...right
After 2 moves: up

| 1 | 4 | 2 |

| 3 | 5 | |

| 6 | 7 | 8 |

Press return for the next state...
After 3 moves: left

| 1 | 4 | 2 |

| 3 | | 5 |

| 6 | 7 | 8 |

Press return for the next state...
After 4 moves: up

| 1 | | 2 |

| 3 | 4 | 5 |

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| 6 | 7 | 8 |
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```
Press return for the next state...
After 5 moves: left
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|   | 1 | 2 |
-------------
| 3 | 4 | 5 |
-------------
| 6 | 7 | 8 |
-------------
```
Press return for the next state...

Question3:
python2 pacman.py -l mediumMaze -p SearchAgent -a fn=ucs
[SearchAgent] using function ucs
[SearchAgent] using problem type PositionSearchProblem
Path found with total cost of 68 in 0.0 seconds
Search nodes expanded: 269
Pacman emerges victorious! Score: 442
Average Score: 442.0
Scores: 442.0
Win Rate: 1/1 (1.00)
Record: Win

python2 pacman.py -l mediumDottedMaze -p StayEastSearchAgent
Path found with total cost of 1 in 0.0 seconds
Search nodes expanded: 186
Pacman emerges victorious! Score: 646
Average Score: 646.0
Scores: 646.0
Win Rate: 1/1 (1.00)
Record: Win

python2 pacman.py -l mediumScaryMaze -p StayWestSearchAgent
Path found with total cost of 68719479864 in 0.0 seconds
Search nodes expanded: 108
Pacman emerges victorious! Score: 418
Average Score: 418.0
Scores: 418.0
Win Rate: 1/1 (1.00)
Record: Win

Question4:
python2 pacman.py -l bigMaze -z .5 -p SearchAgent -a fn=astar,heuristic=manhattanHeuristic
[SearchAgent] using function astar and heuristic manhattanHeuristic
[SearchAgent] using problem type PositionSearchProblem
Path found with total cost of 210 in 0.1 seconds
Search nodes expanded: 549
Pacman emerges victorious! Score: 300
Average Score: 300.0
Scores: 300.0
Win Rate: 1/1 (1.00)
Record: Win
```

Question5:
python2 pacman.py -l tinyCorners -p SearchAgent -a fn=bfs,prob=CornersProblem
[SearchAgent] using function bfs
[SearchAgent] using problem type CornersProblem
Path found with total cost of 28 in 0.0 seconds
Search nodes expanded: 252
Pacman emerges victorious! Score: 512
Average Score: 512.0
Scores:      512.0
Win Rate:     1/1 (1.00)
Record:       Win

python2 pacman.py -l mediumCorners -p SearchAgent -a fn=bfs,prob=CornersProblem
[SearchAgent] using function bfs
[SearchAgent] using problem type CornersProblem
Path found with total cost of 106 in 0.1 seconds
Search nodes expanded: 1966
Pacman emerges victorious! Score: 434
Average Score: 434.0
Scores:      434.0
Win Rate:     1/1 (1.00)
Record:       Win