Run 5 times	MinimaxGhost	RandomGhost
ReflexAgent	Ghost won: 5 Pacman won: 0 Average: 123.6	Ghost won: 0 Pacman won: 5 Average: 382.0
MinimaxAgent	Ghost won: 5 Pacman won: 0 Average: 208.4	Ghost won: 2 Pacman won: 3 Average: 957.8
ExpectimaxAgent	Ghost won: 4 Pacman won: 1 Average: 721.6	Ghost won: 2 Pacman won: 3 Average: 12.4

```
F:\AI\assignment3\multiagent>python2 pacman.py -p ReflexAgent -g MinimaxGhost -n 5
Pacman died! Score: -43
Pacman died! Score: -321
Pacman died! Score: 57
Pacman died! Score: 452
Pacman died! Score: 473
Average Score: 123.6
Scores:        -43.0, -321.0, 57.0, 452.0, 473.0
Win Rate:      0/5 (0.00)
Record:        Loss, Loss, Loss, Loss, Loss
```

```
F:\AI\assignment3\multiagent>python2 pacman.py -p MinimaxAgent -g MinimaxGhost -n 5
Pacman died! Score: -272
Pacman died! Score: 277
Pacman died! Score: 18
Pacman died! Score: 857
Pacman died! Score: 162
Average Score: 208.4
Scores:        -272.0, 277.0, 18.0, 857.0, 162.0
Win Rate:      0/5 (0.00)
Record:        Loss, Loss, Loss, Loss, Loss
```

```
F:\AI\assignment3\multiagent>python2 pacman.py -p ExpectimaxAgent -g MinimaxGhost -n 5
Pacman emerges victorious! Score: 1918
Pacman died! Score: 224
Pacman died! Score: 348
Pacman died! Score: 335
Pacman died! Score: 783
Average Score: 721.6
Scores:        1918.0, 224.0, 348.0, 335.0, 783.0
Win Rate:      1/5 (0.20)
Record:        Win, Loss, Loss, Loss, Loss

F:\AI\assignment3\multiagent>
```

```
F:\AI\assignment3\multiagent>python2 pacman.py -p ReflexAgent -g RandomGhost -n 5
Pacman died! Score: 133
Pacman died! Score: 125
Pacman died! Score: 312
Pacman died! Score: 240
Pacman died! Score: 1100
Average Score: 382.0
Scores:        133.0, 125.0, 312.0, 240.0, 1100.0
Win Rate:      0/5 (0.00)
Record:        Loss, Loss, Loss, Loss, Loss
```

```
F:\AI\assignment3\multiagent>python2 pacman.py -p MinimaxAgent -g RandomGhost -n 5
Pacman emerges victorious! Score: 1771
Pacman died! Score: 617
Pacman died! Score: 472
Pacman emerges victorious! Score: 1026
Pacman emerges victorious! Score: 903
Average Score: 957.8
Scores:        1771.0, 617.0, 472.0, 1026.0, 903.0
Win Rate:      3/5 (0.60)
Record:        Win, Loss, Loss, Win, Win
```

```
F:\AI\assignment3\multiagent>python2 pacman.py -p ExpectimaxAgent -g RandomGhost -n 5
Pacman died! Score: 118
Pacman died! Score: -2144
Pacman died! Score: -978
Pacman emerges victorious! Score: 1653
Pacman emerges victorious! Score: 1413
Average Score: 12.4
Scores:        118.0, -2144.0, -978.0, 1653.0, 1413.0
Win Rate:      2/5 (0.40)
Record:        Loss, Loss, Loss, Win, Win
```

3.

The performances of reflex agent and minimax agent are similar. They move to the best position where they can get the food and far away from the ghost at the same time. The expectimax agent moves slowly unless the ghosts are about to catch it.

4.

Because each ghost evaluates the route via the current position of the pacman and it self. Different position may represent different plan when there are multiple choices for a ghost.