**Northeastern University**

CS 5100 Foundations of Artificial Intelligence

**Homework and PA #7** [300 points]

Please - clearly write your **full name** on the first page. Submit a single PDF file as your answer.

Please provide brief but complete explanations, using diagrams where necessary, and suitably using your own words. While presenting calculations and equations, explain the variables and answers in words.

**Part A:** Study Chapter 11, 12, 13 and 14 of Russel AI textbook – **selected sections only** (See Lecture). Answer the below questions:

1. **From textbook** [40 points]
2. Problem 11.2
3. Problem 11.6
4. **From textbook** [15 points]
5. 12.3
6. **From textbook**  [45 points]
7. Problem 13.7
8. Problem 13.8
9. Problem 13.13

**PART B:** Programming Assignment [200 points]

1. First answer Problem 13.25 on Probabilistic Wumpus World modeling. [50 points]
2. Then, study this tutorial about Probabilistic Wumpus World implementation, and modify the code furnished to demonstrate how would you use this framework and code to solve the Probabilistic Wumpus World problem from I above? Please explain in detail your modified design of code/solution and how you used it to solve the Wumpus World problem. [150 points]

<https://github.com/ktrannt/Wumpus-World-A-Probs-Based-Approach>

**References**

<http://people.cs.pitt.edu/~litman/courses/cs2710/lectures/ch13Wumpus.pdf>