AI Robotics: Assignment 2

(1) Convert the following to first-order predicate logic using the predicates indicated:
- swimming_pool(X) steamy(X) large(X) unpleasant(X) noisy(X) place(X)

• All large swimming pools are noisy and steamy places
• All noisy and steamy places are unpleasant
• All noisy and steamy places except swimming pools are unpleasant
• The swimming pool is small and quiet

(2) Represent the following sentences in first-order logic using a consistent vocabulary that you must define:

• No mortal lives longer than 150 years
• Some Pompeian’s like anchovies
• There is a barber who shaves all men in town who do not shave themselves
• Politicians can fool some of the people all of the time, and they can fool all of the people some of the time, but they cannot fool all of the people all of the time

(3) Imagine there is a house robot, which basically acts as a home guard, picks up dirty laundry and kids toys, and makes a cup of coffee or tea first thing in the morning. Invent a set of predicates that map to sensors the robot might need to do these tasks. Write a set of if-then rules that might control the robot.