Assignment 4

Note: You may answer in hundredths decimals.

1. For the dual souring game in class 8, please summarize your ordering strategy, and summarize your group performance. (Note, although the game is played by group, and your strategy is the same, please provide a summary individually and use your own words. Copying and pasting from other group member's work will be considered as plagiarism.)

2. The local supermarket buys lettuce each day to ensure fresh produce. Each morning any lettuce that is left from the previous day is sold to a dealer that it resells to farmers who use it to feed their animals. This week the supermarket can buy fresh lettuce for $5.00 a box. The lettuce is sold for $10.00 a box and the dealer that sells old lettuce is willing to pay $3.50 a box. Past data shows that daily demand for lettuce is normally distributed with mean 250 boxes and standard deviation of 34 boxes. How many boxes of lettuce should supermarket purchase tomorrow? What if past data is unreliable and the supermarket manager estimates the daily demand to be uniformly distributed from 300 boxes to 400 boxes?

3. Sallys Silk Screening produces specialty T-shirts that are primarily sold at special events. She is trying to decide how many to produce for an upcoming event. During the event itself, which lasts one day, Sally can sell T-shirts for $30 apiece. However, when the event ends, any unsold T-shirts are sold for $7 a piece. It costs Sally $10 to make specialty T- shirt. Using Sallys estimate of demand that follows, how many T-shirts should she produce for the upcoming event?

Demand	Probability
300	0.05
400	0.10
500	0.40
600	0.30
700	0.10
800	0.05

4. On a given Hong Kong-Singapore flight there are 200 seats. Suppose the ticket price is $475 for each seat, and the number of passengers who reserve a seat but do not show up for departure is normally distributed with mean 40 and standard deviation 25. You decide to overbook the flight and estimate that the average loss from a passenger who will have to be "bumped" (if the number of passengers exceeds the number of seats) is $800 (in addition to refunding the original ticket price). What is the maximum number of reservations that should be accepted?

5. Lieutenant Commander Data is planning to make his monthly (every 30 days) trek to Gamma Hydra City (GHC) to pick up a supply of isolinear chips. The trip will take Data about four days. Just before he leaves, he calls in the order to the GHC Supply Store. He uses chips at an average rate of 5 per day with a standard deviation of demand of 2 per day. He needs a 98 percent service probability. If he currently has 45 chips in inventory, how many should he order? What is the most he will ever have to order, assuming that inventory level never falls below 0? (Assume that the demand is normally distributed.)