**MSBA7004 Assignment 4**

1. Dual Sourcing Game Strategy

China: standing order 30, Mexico>70

1. From the question we have:

|  |  |
| --- | --- |
| Unit Cost | $5 |
| Sell Value | $10 |
| Salvage Value | $3.5 |
| Daily Demand Mean | 250 |
| Daily Demand SD | 34 |

Therefore the supermarket should purchase 276 boxes of lettuce.

If the demand is a uniform distribution from 300 to 400, the boxes to stock in:

Therefore the supermarket should purchase 377 boxes of lettuce.

1. From the question we have:

|  |  |
| --- | --- |
| Unit Cost | $10 |
| Sell Value | $30 |
| Salvage Value | $7 |

Cumulative probability of demand is as below:

|  |  |  |
| --- | --- | --- |
| Demand | Probability | Cumulative Probability |
| 300 | 0.05 | 0.05 |
| 400 | 0.10 | 0.15 |
| 500 | 0.40 | 0.55 |
| 600 | 0.30 | 0.85 |
| 700 | 0.10 | 0.95 |
| 800 | 0.05 | 1 |

Since 0.85<0.8696<0.95, according to the round-up rule, Sally should produce 700 T-shirts.

1. From the question we have:

|  |  |
| --- | --- |
| Ticket Price | $475 |
| Loss from bumped passenger | $800 |
| Seats available | 200 |
| Not show up (overbooking demand) mean | 40 |
| Not show up (overbooking demand) SD | 25 |

Optimal overbooking amount:

Therefore, the airline should accept 200+31.869 = 232 reservations.

1. From the question we have:

|  |  |
| --- | --- |
| Review Time (T) | 30 days |
| Lead Time (LT) | 4 days |
| Current inventory (I) | 45 |
| Daily demand mean (D) | 5 |
| Daily demand SD () | 2 |
| Service Level | 98% |

Target Inventory:

So the target inventory is 194 units.

Order Quantity: