Lecture 11 Workshop

Name: Goh Aik Tio/Jiang Xue/Li XueQing

Student ID: A0191238A/A0186734U/A0186108A

Task 1 – Risk Neutral

	S=100	S=200	S=1000	S=10000
Orders	4090.59	4048.97	4091.27	4188.37
Expected Profit	215929.85	217987.18	219833.87	222367.67
Expected Sales	2977.42	2989.67	3016.59	3061.35
Expected Lost Sales	98.30	108.96	120.58	131.30
Stockout Probability	0.19	0.20	0.20	0.20
Expected Leftover Inventory	1113.17	1059.30	1074.68	1127.02

Task 2 – CVAR

Based on 10000 scenarios, we run the following betas.

	Beta = 0.9	Beta = 0.99	Beta = 0.999
Orders	1548.13	260.61	0.00
Expected Profit	119422.25	20700.82	0.00
Expected Sales	1503.85	259.13	0.00
Expected Lost Sales	1688.80	2933.52	3192.65
Stockout Probability	0.92	0.99	1.00
Expected Leftover Inventory	44.28	1.48	0.00

Task 3 – WCA

	Beta = 0	Beta = 0.25	Beta = 0.5	Beta = 0.75	Beta = 0.95	Beta = 0.99999
Orders	222367.665	215771.967	197894.486	163161.319	89059.461	0.0
Expected Profit	4188.258	3486.424	2891.525	2204.831	1138.492	0.0

When beta = 0, cvar is the same as expected profit (as in task 1, S=10000).

When beta = 0.99999, cvar is same as worst case profit.

When we change salvage value from $90 to $50, the expected profit is 102857.361. Previous profit obtained was 119422.25. The order quantity dropped from 1548.13 to 1338.