QRM – Workshop 11

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Task 1

Scenarios	100 (default)	200	1000	10,000
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 – CV@R

Scenarios	1000	1000	1000
Beta	**0.9**	**0.99**	**0.999**
Expected sales	1566.39	165.73	0.00
Expected lost sales	1570.79	2971.45	3137.18
Stockout Probability	0.92	0.992	1.00
Expected leftover inventory	46.29	0.823	0.00

TASK 3 – CV@R

Scenarios	1000	1000	1000	1000	1000	1000
Beta	**0.0**	**0.25**	**0.5**	**0.75**	**0.95**	**0.99999**
Expected profit	219,833.87	213,636.38	194,521.63	162,559.11	90,369.65	0.00
Expected sales	3016.46	2828.37	2508.39	2062.43	1134.77	0.00
Expected lost sales	120.72	308.81	628.79	1074.75	2002.40	3137.18
Stockout Probability	0.200	0.400	0.60	0.80	0.96	1.00
Expected leftover inventory	1074.13	631.67	307.46	121.77	20.62	0.00
CVaR	219,833.87	192,580.81	163,775.67	126,027.54	51,197.70	0.000

When the Beta is zero, the Expected Profit and CVaR are the same. Similarly, when beta is 0.99999, the expected profit and CVaR are also the same (e.g. it could be that it is the worst case scenario (1 scenario)). The higher the CVaR, the higher the expected profit. For the worst-case profit ($0.00), and CVaR is also 0.