IE 460 Comments on Homework #3

General Comments:

The homework questions this time are straightforward. You must respond to each question asked in the problem statement. More specifically, you need to be able to write and compute for normally distributed demand:

• the optimal order quantity (table look-ups or use Excel),

• the expected profit from the policy used (policy results in the computation of the order quantity),

• the expected number of customers not satisfied (turned away) because of stocking out,

• the expected stock remaining in the inventory at the end of the season (this was not asked).

Note that Question 2 is the same question with "improved" forecasts. Hence, if you have used (coded the correct formulas for) Excel to compute your quantities, life would be straightforward in Question 2.

There is an effort spent to develop the "improved" forecasts. Think about the maximum you would economically defend for such a study (of course, after the study ended). An important detail in using Excel or a similar spreadsheet program: As you submit your work as a hard copy, the formulas you have established in Excel (or any program) may only be visible if you force it and make it visible. We need to see the formulas to follow your work.

Final note: I recommend you thoroughly review the derivations while doing your homework. By doing so, you can understand the solution technique and solve more complicated problems (for instance, how do you find optimal order quantity if there is a price discount?)

Homework 3 statistics:

In general, you did a great job on this homework. No student got a bonus point since most answered questions perfectly, and it would not be very meaningful if all got bonus points.

Average: 1.43 (out of 2), Standard Deviation: 0.83

Grades	0	1	2	3
# of students	8	5	24	0

Question 1

Comments regarding your performance and Grading:

- Most did a great job on this question.
- Some used incorrect formula for expected profit. Please consider that the correct formula is presented in chapter 13 of the course book. (No deduction points for the formula in your lecture note)
- Please consider that $E(D) - Q^*$ is not a correct formula for expected lost customers. The correct one is presented in chapter 13 of the course book.

Question one has three parts. Students who answered all three parts correctly or made minor calculation or substitution mistakes got 2. Students who answered two parts correctly got 1.5. Students who answered only one part correctly got 1. If the answers of all three parts are incorrect the grade is 0.

Average: 1.39 (out of 2), Standard Deviation: 0.81

Grades	0	0.5	1	1.5	2
# of students	7	2	4	3	21

Question 2

Comments regarding your performance and Grading:

- Most did a great job on this question.
- Some used incorrect formula for expected profit. Please consider that the correct formula is presented in chapter 13 of the course book. (No deduction points for the formula in your lecture note.)
- Please consider that $E(D) - Q^*$ is not a correct formula for expected lost customers. The correct one is presented in chapter 13 of the course book.
- Some forgot to compare expected profits attained in Q1 and Q2 and determine if profit has increased or decreased because of market research.

Question two has four parts. Students who answered all parts correctly or made minor calculation or substitution mistakes got 2. Students who did not answer only one part correctly got 1.5. Two correct parts made the grade 1. Students who answered only one part correctly got 1. If all parts' answers are incorrect, the grade is 0.

Average: 1.25 (out of 2), Standard Deviation: 0.77

Grades	0	0.5	1	1.5	2
# of students	8	1	6	8	14