

IE 375 Comments on Mini-Homework #1

General Comments

To receive full points, I strongly recommend that you write the formulae before making the calculations since it is very likely that you make errors while dealing with the numbers. Unless you write the formulae at the beginning, incorrect numbers will indicate that you use an incorrect formula, thereby reducing your points from the homework.

Homework 2 (out of 2) – Statistics: Average: 1.59 and Standard Deviation: 0.46

Grade (G)	$1.9 \leq G < 2$	$1.8 \leq G < 1.9$	$1 \leq G < 1.8$	$G < 1$	Not Submitted
# of students	17	15	13	4	2

Comments regarding your performance:

1. Please note that you need to understand the assumptions behind a formula (and show this in your work). Although sometimes selection of a formula is so obvious that you can receive full points, there may be some cases where it requires an explanation (for instance, assumptions satisfied or the relation between a formula and a modeling technique selected). Please see comment #5 and #7 for further details.
2. In *part a*, many could convert the parameter values correctly; however, they did not mention the units. (For instance, they wrote $\lambda=7300$; but $\lambda=7300$ engine/year would be the fully correct answer). Please note that unless you write the units, it is very likely that you will make mistakes while converting parameter values.
3. In *part a*, some rounded the order quantity, although you were not expected to do so. Since rounding is not required, the rounded order quantities are sub-optimal.
4. In *part a*, some found the order quantity by using daily demand rate and daily holding cost, whereas some found it by using annual demand rate and annual holding cost. Both approaches are acceptable as long as the units are consistent. Note that average total cost will be the same regardless of what you take the time unit, as long as you are consistent (check this by solving the problem with daily rates, costs and annual rates, costs to see that the average total cost you obtain is the same!). When you are asked average annual total cost, it is simply to have a benchmark for real decision making purposes. Of course, if you have a parameter changing overtime, the statements above are not correct; those are the cases where we compare total costs, rather than average ones.
5. In *part d*, most of you stated that the reorder point is $R=\lambda*\tau$ without mentioning that this formula can be used if $\tau < T$. The re-order point changes based on the relation between lead-time and cycle length.
6. In *part d*, some used a true logic while finding the reorder level (for instance, the ratio of lead time vs. cycle time should be equal to the ratio of reorder point vs. order quantity) Those of you receive full points.
7. In *part f (i)*, most of you stated that a full container is used since the container capacity is less than the order amount. Please note that this statement is true because the objective function is convex. You were expected to mention this as it may not be necessarily true that utilizing the full container yields the minimum cost.