

Assignment 3

Instructions

You should submit two files:

- 1) A pdf document that provides the solutions and discussion (if any) for each question. You should provide the formulas that you used and/or the optimization model you formulated. You should also briefly show/explain your calculations. **Please prepare this document by typing it in either MS Word or LaTeX, and then convert it to a PDF file. Please do NOT submit handwritten work.**
- 2) An Excel file that shows your workings (e.g., calculations, optimization result). The file should be clearly understandable to the TA. (You can provide brief comments/notes in the Excel worksheets if necessary.)

Questions (Total 100 points)

1. [32 pts] In Chapter 11 “Managing Economies of Scale in a Supply Chain Cycle Inventory”,
 - a. [8 pts] Exercise 1 (“Harley-Davidson has its engine assembly plant ...”)
 - Assume 365 operating days in a year (that is, there is no day off)
 - b. [8 pts] Exercise 2 (“As part of its initiative to implement”)
 - c. [8 pts] Exercise 11 (“Ford and GM carry spare parts ...”)
 - You don’t need to answer the last question about “How should they divide the fixed cost per truck among themselves?”
 - d. [8 pts] Exercise 13 (“Demand for fasteners at W.W. Grainer is ...”)
2. [30 pts] In Chapter 12 “Managing Uncertainty in a Supply Chain Safety Inventory”
 - a. [10 pts] Exercise 2 (“Weekly demand for jeans at a Zara store ...”)
 - b. [10 pts] Exercise 12 (“Croma is an Indian retail chain ...”)
 - c. [10 pts] Exercise 19 (“Weekly demand for gaming consoles at Liverpool, ...”)
3. [38 pts] In Chapter 13 “Linking Product Availability to Profits”
 - a. [12 pts] Exercise 1 (“Green Thumb, a manufacturer of lawn ...”)
 - b. [12 pts] Exercise 5 (“Snoblo, a manufacturer of snowblowers, ...”)
 - c. [14 pts] Exercise 10 (“Sport Obermeyer (SO) is a manufacturer ...”)