Chapter 2: Data-Driven Decision-Making

# The Newsvendor Model

## Corresponding reading: Chapter 2, Page 2

### Purpose: Learning the newsvendor model as an important inventory model.

1. Research the newsvendor model (e.g., watch a video about it).
2. When should this model be used to manage inventory?
3. What are the parameters of the newsvendor model?
4. List at least 10 examples in which the newsvendor model can be used to find the optimal order quantity.
5. Calculate the cost of overage () and the cost of underage () for the following example:
   * Retail price:
   * Purchase price:
   * Salvage value:
6. Calculate the critical fractile.
7. Assuming demand follows a uniform distribution between and , find the optimal order quantity.
8. Now assume the demand follows a normal distribution with mean and standard deviation . Find the optimal order quantity.
9. Now assume the demand follows a normal distribution with mean and standard deviation . Find the optimal order quantity.
10. What conclusion can you make by comparing parts (h) and (i) about the relationship between uncertainty in order amount (represented by the standard deviation) and optimal order quantity?

***Note:*** *Understanding the case and what you need to do is PART OF THE CASE. If you do not understand a specific part, or are not sure what you should do, you need to review the corresponding reading section in the text before asking for help. You might also need to do some search on the internet. That is all part of the case and your learning process.*