

Problem 1

Your organization sells **X** (provided in the data set below) units of a product every month. Data on the product is as follows:

- Product cost is \$350 with a holding cost of 20 percent.
- Fixed cost for each order your organization places with the vendor is \$4,000.

Respond to the prompts below using the following data set:

[Problem Set 3 - Q1 Data Set \(XLXS\)](#) 

Respond to the following questions:

- What is the optimal order size for your organization?
- What is the annual holding cost of the optimal policy?
- How many orders per year does your organization place?
- What is the annual ordering cost?

Problem 2

Given the below data set, calculate the optimal production batch size, the annual set up and holding costs for the optimal policy.

[Problem Set 3 - Q2 Data Set \(XLXS\)](#) 

Problem 3

Weekly demand for a product at your retail store is normally distributed with a mean of Z (provided in the data set below) and a standard deviation of 80. Inventory is continuously monitored and an order of 1,000 products is placed each time the inventory drops to 950 units. The replenishment lead-time is three weeks. Respond to the prompts below using the following data set:

[Problem Set 3 - Q3 Data Set \(XLXS\)](#) 

- How much safety inventory does your store carry? What is the CSL?
- Assume that the supply lead-time from the supplier is normally distributed with a mean of 3 weeks and a standard deviation of 2 weeks. How much safety inventory should your store carry if it wants to provide a CSL of 97 percent?