Fall 2020 - IE375 - Recitation – Thursday December 3rd

Question 1 (an exam question from previous years)

A retailer of consumer electronics has to find his/her order quantity for a specific type of USB flash drive. There is a short selling period for this product and the demand during this period has a uniform distribution between 0 and 1000. The retailer purchases each USB flash drive for \$12.05 sells for \$32. A shortage cost of \$14 is incurred for each unit demand unsatisfied (in addition to lost profit). Unsold USB drives can be salvaged at a return of \$11 per unit.

a) Find the optimal quantity to be ordered at the beginning of the selling period?

b) What is the optimal order quantity if the supplier requires a minimum order quantity of 1000 flash drives? Why?

c) What is the retailer's expected gain from salvages if he/she orders 600 units?

d) What is the retailer's expected cost from shortages if he/she orders 600 units?

Question 2

Exercise Set IV), Question 3).