

Problem Set 4 Day 6-Questions

Questions

1. Consider the following information for inventory management. The item is demanded 50 weeks a year.

Item Cost	\$10.00
Order Cost	\$250.00
Annual holding cost (%)	33% of item cost
Lead time	1 week
Annual Demand	25,750

(a) State the order quantity and reorder point.

(b) Determine the annual holding and order costs.

2. Quarter-inch stainless-steel bolts are consumed in a factory at a fairly steady rate of 60 per week. The bolts cost the plant two cents each. It costs the plant \$12 to initiate an order, and holding costs are based on an annual interest rate of 25 percent.

(a) Determine the optimal number of bolts for the plant to purchase and the time between placement of orders.

(b) What is the yearly holding and setup cost for this item?

3. Reconsider the bolt example in Question 2. Suppose that although we have estimated demand to be 60 per week, it turns out that it is actually 120 per week (i.e., we have a 100 percent forecasting error).

(a) If we use the lot size calculated in the previous problem (i.e., using the erroneous demand estimate), what will the setup plus holding cost be under the true demand rate?

(b) What would the cost be if we had used the optimum lot size?

(c) What percentage increase in cost was caused by the 100 percent demand forecasting error? What does this tell you about the sensitivity of the EOQ model to errors in the data?