# Homework – Inventory Management

A regional distributor purchases discontinued appliances from various suppliers and then sells them on demand to retailers in the region. The distributor operates 5 days per week, 52 weeks per year. Only when it is open for business can orders be received. Management wants to reevaluate its current inventory policy, which calls for order quantities of 440 counter-top mixers. The following data are estimated for the mixer:

Average daily demand = 100 mixers

Standard deviation of daily demand = 30 mixers

Lead time = 3 days

Holding cost = $9.40/unit/year

Ordering cost = $35/order

Cycle-service level = 92 percent

If the distributor uses a continuous review (*Q*) system

a. What order quantity *Q*, and reorder point, *R*, should be used?

b. What is the total annual cost of the system?

c. If on-hand inventory is 40 units, one open order for 440 mixers is pending, and no backorders exist, should a new order be placed?

Suppose now that a periodic review (*P*) system is used at the distributor, but otherwise the data are the same.

a. Calculate the *P* (in workdays, rounded to the nearest day) that gives approximately the same number of orders per year as the EOQ.

b. What is the target inventory level, *T*? Compare the *P* system to the *Q* system in the previous question.

c. What is the total annual cost of the *P* system?

d. It is time to review the item. On-hand inventory is 40 mixers; receipt of 440 mixers is scheduled, and no backorders exist. How much should be reordered?