2. If the annual demand for a product is 200,000 units, then the annual carrying cost rate is 30 percent of the cost of the unit, the product costs $37.50 per unit to purchase, and each time the product is ordered the related ordering cost is $96.00.
   a. What is the EOQ?
   b. What is the TSC at the EOQ?
   c. How much would the TSC increase if the order quantity must be 2,500 units because of a standard shipping-container size?

8. The Ohio Electric generating plant in Cincinnati buys coal to generate electricity. Coal is supplied by rail cars at the rate of 9,000 tons per day at a price of $16.50 per ton and is used at a rate of 1,400 tons per day. The plant operates 365 days per year, and its annual carrying cost for the coal is 28 percent of the average value of its inventory of coal. The ordering cost for a shipment of coal is $675. Ohio Electric would like to use the EOQ model.
   a. What quantity of coal should Ohio Electric order each time it places an order?
   b. What is the annual TSC that Ohio Electric should expect?
   c. How many days should it take to receive one shipment after it starts arriving?
   d. What is the maximum inventory level of coal that should be expected?

10. A grocery store orders paper grocery bags from a distributor. The store uses about 2,300 cases of bags per year, and its ordering cost is $65 per order. The store’s carrying cost rate is 35 percent of acquisition cost. The distributor has the following pricing structure for cases of bags: 1–49 cases, $129.95 per case; 50–249, $127.95 per case; 250–999, $126.95 per case; 1000+, $125.95 per case.
   a. How many cases of bags should the store order each time?
   b. What would be the resulting total inventory cost per year (ordering plus carrying plus materials)?
   c. How many orders per year should be expected?
   d. What is the expected maximum inventory level of paper bags (in cases)?
   e. If the store has only enough storage space for 200 cases of bags, how many should it order each time?