

MGT236

Inventory Management

Problem 1:

Southeastern Bell stocks a certain switch connector at its central warehouse for supplying field service offices. The yearly demand for these connectors is 15,000 units. Southeastern estimates its annual holding cost for this item to be \$25 per unit. The cost to place and process an order from the supplier is \$75. The company operates 300 days per year, and the lead time to receive an order from the supplier is 2 working days.

- a) Find the economic order quantity.
- b) Find the annual holding costs.
- c) Find the annual ordering costs.
- d) What is the reorder point?

Problem 2:

Lead time for one of your fastest-moving products is 21 days. Demand during this period averages 100 units per day.

- a) What would be an appropriate reorder point?
- b) How does your answer change if demand during lead time doubles?
- c) How does your answer change if demand during lead time drops in half?

Problem 3:

Meryem, of H.M. Masri, uses 1,200 of a certain spare part that costs \$25 for each order, with an annual holding cost of \$24.

- a) Calculate the total cost for order sizes of 25,40,50,60, and 100.
- b) Identify the economic order quantity and consider the implications for making an error in calculating economic order quantity

Problem 4:

Thomas Kratzer is the purchasing manager for the headquarters of a large insurance company chain with a central inventory operation. Thomas's fastest-moving inventory item has a 1 demand of 6,000 units per year. The cost of each unit is \$100, and the inventory carrying cost is \$10 per unit per year. The average ordering cost is \$30 per order. It takes about 5 days for an order to arrive, and the demand for 1 week is 120 units. (This is a corporate operation, and there are 250 working days per year.)

- a) What is the EOQ?
- b) What is the average inventory if the EOQ is used?
- c) What is the optimal number of orders per year?
- d) What is the optimal number of days between any two orders?
- e) What is the annual cost of ordering and holding inventory?
- f) What would be an appropriate reorder point?

Problem 5:

Radovilsky Manufacturing Company, in Hayward, California, makes flashing lights for toys. The company operates its production facility 300 days per year. It has orders for about 12,000 flashing lights per year and has the capability of producing 100 per day. Setting up the light production costs \$50. The cost of each light is \$1. The holding cost is \$0.10 per light per year.

- a) What is the optimal size of the production turn?
- b) What is the average holding cost per year?
- c) What is the average setup cost per year?
- d) What is the total cost per year, including the cost of the lights?

Problem 6:

Artur Meiners is the production manager of Wheel-Rite, a small producer of metal parts. Wheel-Rite supplies Cal-Tex, a larger assembly company, with 10,000 wheel bearings each year. This order has been stable for some time. Setup cost for Wheel-Rite is \$40, and holding cost is \$.60 per wheel bearing per year. Wheel-Rite can produce 500 wheel bearings per day. Cal-Tex is a just-in-time manufacturer and requires that 50 bearings be shipped to it each business day.

- a) What is the optimum production quantity?
- b) What is the maximum number of wheel bearings that will be in inventory at Wheel-Rite?
- c) How many production runs of wheel bearings will Wheel-Rite have in a year?
- d) What is the total setup + holding cost for Wheel-Rite?

