

lecture example 2

$$(a) \quad EOQ = \sqrt{\frac{2C_o D}{C_H}}$$

where C_o = fixed costs per order
 D = annual demand
 C_H = the stock holding cost per annum

$$EOQ = \sqrt{\frac{2 \times 20 \times 40,000}{2.50}}$$

unit price \$25,
 inventory holding costs
 amount to 10% of
 inventory value
 so $\$25 \times 0.1 = \$2.50$

$$EOQ = \underline{800 \text{ units}}$$

(b)

$$\text{order quantity} = \underline{800 \text{ units}}$$

$$\text{Number of orders} = \text{demand for desks} \div \text{order quantity} = 40,000 \div 800 = \underline{50}$$

$$\text{Average stock} = \text{order quantity} \div 2 = 800 \div 2 = \underline{400}$$

$$\text{Reorder cost p.a.} = \text{number of orders} \times \text{cost of reordering} = 50 \times 20 = \underline{\$1,000}$$

$$\text{Stock holding cost p.a.} = \frac{\text{average stock} \times \text{cost of each chair}}{\% (10\%) \text{ of inventory value}} = \frac{400 \times \$25}{10} = \underline{1,000}$$

$$\text{Total stock cost p.a.} = \text{reorder cost p.a.} + \text{stock holding cost p.a.} = 1,000 + 1,000 = \underline{2,000}$$