

Exercise: 1/1/D/D with discounts

A manufacturing company purchases electric engines. The estimated demand the company must satisfy requires 4000 engines per year. Each order costs 250 €. The obsolescence rate is 20% of the value of the engines in one year. The price of the engines is discounted according to the number of engines purchased. In the range up to 1000 engines, the price is 20 €/engine; in the range from 1000 to 4000 engines it is 19 €/engine; from 4000 engines onward it is 18 €/engine.

Classify the inventory system here described and determine

- 1) the size of the economic order quantity (EOQ)
- 2) the optimal period of the orders
- 3) the resulting minimum cost

in the case of total quantity discount and incremental discount.