Optimization of Lot Size and Quantity

Learning Objectives

- Find the economic lot or economic order quantity size which minimizes total cost

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1. A company produces and sells 100,000 boxes of playing cards each year. Each production run has a fixed cost of $500 and an additional cost of $1.75 per box of playing cards. To store a box for a full year costs $2.50. What is the optimal number of boxes of playing cards the company should make during each production run?

2. A company orders and uses 7,500 cans of paint each year. Each order has a fixed shipping cost of $250 and an additional cost of $3.50 per can of paint. To store a can for a full year costs $5. What is the optimal number of cans of paint the company should buy during each order?

- Producing: $T(q) = \frac{fM}{q} + gM + \frac{kq}{2}$
- Ordering: $T(q) = \frac{fM}{q} + \frac{kq}{2}$

ANSWER KEY

1. $q = 6325$
2. $q = 866$