

Solving production lot size problem with an improved delivery policy and failure in rework by a simplified solution procedure

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Abstract

A simplified solution procedure is proposed in this paper to solve a specific production lot size problem with an improved delivery policy and failure in rework. Unlike the conventional method using differential calculus with the need for proving optimality of the long-run average cost function, this paper demonstrates that the optimal lot size and its related costs for the aforementioned production model can be derived without derivatives. Such an approach may enable practitioners who with little knowledge of calculus to understand with ease the realistic production-shipment integrated systems.

Keywords: *Operations management, production-shipment system, lot sizing, failure in rework*