

Matching Supply with Demand: An Introduction to Operations Management

Solutions to End-of-Chapter Problems

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Chapter 11

Q11.1. Three Step

- a. In a push system, inventory would accumulate in the system as the fast (high capacity) resource is upstream in the process. This would be non-value-adding, as it would have no positive impact on the overall flow rate.
- b. Since for this process, the sequence of the assembly tasks does not matter, we could simply move the slowest step first. This would ensure that we are not moving flow units into the system faster than the bottleneck pace.
- c. A pull system could be implemented using Kanban cards between the stations. This way, the slow last step could pace the faster steps upstream. We should also ensure that we are not producing faster than the overall demand (there is no information given in the question about demand)

Q11.2. Six Step

The simple idea here is that we redesign the lay-out of the process, holding the current sequence constant. By creating a U-shaped line, it is possible to have step 6 and step 1 be staffed by the same person, who would operate on the 3 minute cycle that is imposed by the bottleneck step (step 3). This would cut the cost of direct labor / it would increase the average labor utilization.