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|  | **L A B    O V E R V I E W** |  |

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This lab looks at bottlenecks and the calculations necessary to determine which process is the source of a bottleneck condition. Use MS Word to copy your answers.

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| **Scenario/Summary** |

**Situation**: Maruchek's makeshift manufacturing facility has three departments: shaping, pickling, and packing. Maruchek's orders average 100 pieces per order.

Each of the three shaping machines requires 1 hour to set up and can run one piece per minute.

The pickling department lowers baskets into brine tanks and subjects them to low-voltage current, heating and cooling, and a rinse. The whole process takes 4 hours for any number of baskets or pieces. One brine tank is available and it is capable of processing four baskets at one time. Each basket can hold 50 pieces. Baskets are loaded while a load is being processed in the tank.

Each piece is inspected and wrapped in bubble pack in the packing department. Each of the four people in the department can do this at the rate of 25 pieces per hour.

Maruchek has heard of optimized production technology (OPT) and wants to identify the bottleneck in his department.

Assume you have enough labor to set up all of the shaping machines at the same time.

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| **Deliverables** |

Determine the process requirements for the three departments and identify which department is a bottleneck. Submit your answer in an MS Word document.

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|  | **L A B    S T E P S** |  |

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| **STEP 1: Shaping** |  |

Determine the setup, runtime, and total time for the shaping department. Copy your answer to an MS Word document.

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| **STEP 2: Pickling** |  |

Determine the setup, runtime, and total time for the pickling department. Copy your answer to an MS Word document.

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| **STEP 3: Packing** |  |

Determine the setup, runtime, and total time for the packing department. Copy your answer to an MS Word document.

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| **STEP 4: Bottleneck** |  |

Determine which department is the bottleneck for this production operation. Remember that it often helps understand the relationship of the different processes by putting everything in a nice, neat table like we did last week.

Copy your answer into an MS Word document.