Assignment 3

Currently, the company's output consists of 2,000 units per day, and it takes 30 minutes to fill each order. A new technology has been developed that reduces the filling time by 20%.

1. a. Calculate the current and proposed output levels.

   - Current output: 2,000 units/day
   - Proposed output: 2,000 units/day * (1 - 0.20) = 1,600 units/day

   b. Calculate the current and proposed fill times.

      - Current fill time: 30 minutes
      - Proposed fill time: 30 minutes * (1 - 0.20) = 24 minutes

   c. Calculate the current and proposed order sizes.

      - Current order size: 1,000 units
      - Proposed order size: 1,000 units / (1,600 units/day) = 0.625 units/order

   d. Calculate the current and proposed cycle times.

      - Current cycle time: 30 minutes + 1 hour = 1.5 hours
      - Proposed cycle time: 24 minutes + 1 hour = 1.4 hours

   e. Calculate the current and proposed setup times.

      - Current setup time: 0.5 hours
      - Proposed setup time: 0.5 hours

2. a. Calculate the current and proposed utilization rates.

      - Current utilization rate: 1,000 units / 2,000 units/day = 0.50
      - Proposed utilization rate: 1,000 units / 1,600 units/day = 0.625

     b. Calculate the current and proposed inventory levels.

      - Current inventory level: 200 units
      - Proposed inventory level: 200 units / 1,600 units/day = 0.125 units/order

3. a. Calculate the current and proposed cycle times.

      - Current cycle time: 30 minutes + 1 hour = 1.5 hours
      - Proposed cycle time: 24 minutes + 1 hour = 1.4 hours

     b. Calculate the current and proposed setup times.

      - Current setup time: 0.5 hours
      - Proposed setup time: 0.5 hours

4. a. Calculate the current and proposed cycle times.

      - Current cycle time: 30 minutes + 1 hour = 1.5 hours
      - Proposed cycle time: 24 minutes + 1 hour = 1.4 hours

     b. Calculate the current and proposed setup times.

      - Current setup time: 0.5 hours
      - Proposed setup time: 0.5 hours

5. a. Calculate the current and proposed cycle times.

      - Current cycle time: 30 minutes + 1 hour = 1.5 hours
      - Proposed cycle time: 24 minutes + 1 hour = 1.4 hours

     b. Calculate the current and proposed setup times.

      - Current setup time: 0.5 hours
      - Proposed setup time: 0.5 hours