

# [Question ideal cycle time (min. shirt) 0.5 0.5](https://assignbuster.com/question-ideal-cycle-time-minshirt-05-05/)

Question 1 Operation Current Process Regular Shirts Mike’s Plan Regular & Custom Shirts Ike’s Plan Regular Shirts Custom Shirts Ideal Cycle Time (min./shirt) 0. 5 0. 5 0.

67 3. 9 Actual Cycle Time (min./shirt) 0. 6 0. 533 0. 67 4.

8 Manufacturing Lead Time (days) 14. 7 2. 19 12. 64 0.

5 WIP Inventory (shirts) 11760 1980 9060 50 Production Capacity (shirts/day) 960 960 720 123. 1 Capacity Utilization 83. 33% 93.

75% 111% 81. 20% Direct Labour Content (min./shirt) 26. 51 27.

01 26. 51 26. 01 Direct Labour Utilization 69. 00% 77. 90% 80. 74% 33. 90% Direct Labour Cost ($/shirt) $3.

84 $3. 47 $3. 26 $7. 68 Formulae Used Ideal Cycle Time Process which takes the maximum amount of time in the production chain (also known as bottle neck time) Actual Cycle Time Inverse of total shirts produced per minute Manufacturing Lead Time Total WIP Inventory / Actual Production Capacity WIP Inventory Addition of all individual WIP inventories Production Capacity Number of shirts produced using ideal cycle time Capacity Utilization (Actual Production / Production Capacity) % Direct Labour Content Total duration of labour required for production of one piece of shirt Direct Labour Utilization Total direct labour utilized / total direct labour available Direct Labour Cost Total direct cost of labour / total number of units produced Question 2         Mike’s Plan Ike’s Plan     Regular Customized Regular Customized   Total Shirts Manufactured 16000 2000 16000 2000   Cost of raw material per shirt ($) 7 7. 7a 7 7. 7a   Cost of Labour per shirt ($) 4.

5 4. 5 5b 4. 5   Other indirect cost per shirt ($) 4. 5 4.

5 4. 5 4. 5   Total Cost per shirt ($) 16 16. 7 16. 5 16. 7   Wholesale Price ($) 25 35 25 35   Profit ($) 144, 000 36, 600 136, 000 36, 600   Total Profit ($) 180, 600 172, 600   aFor customized shirts, the cost of raw materials is considered to be 10% higherbCapacity Utilization = 111.

11% Overtime duration = 8\*60\*11. 11% = 53. 33 min./day/personOvertime wages = 53. 33 \* $9 / 60 = $8 per worker per dayOvertime wage per shirt = Overtime wages \*No. of workers/shirts per day = 8\*49/800=$0. 5 per shirtSuggestionProfitIn terms of profit, Mike’s idea is betterthan Ike’s idea as the total profit is greater by a margin of $8000. The totalcost per regular shirt for Mike’s process is also better as compared to Ike’sprocess.

Manufacturing Lead Time(MLT)In terms of MLT, Ike’s process takeslesser time for customized shirts as compared to Mike. However, the effectiveMLT for Regular and Customized shirts is better for Mike than Ike. Thus, we would recommendMike’s idea of installing an extra machine for cutting and using the sameassembly line for other operations.

This results in better profitability andmanufacturing lead-time.