

Question ideal cycle  
time (min. shirt) 0.5  
0.5



**ASSIGN  
BUSTER**

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	7.7a	7.7	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 =  $8 \times 60 \times 11.11\% = 53.33$  min./day/personOvertime

wages =  $53.33 \times \$9 / 60 = \$8$  per worker per dayOvertime wage per shirt =

Overtime wages \*No. of workers/shirts per day =  $8 \times 49 / 800 = \$0.5$  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.