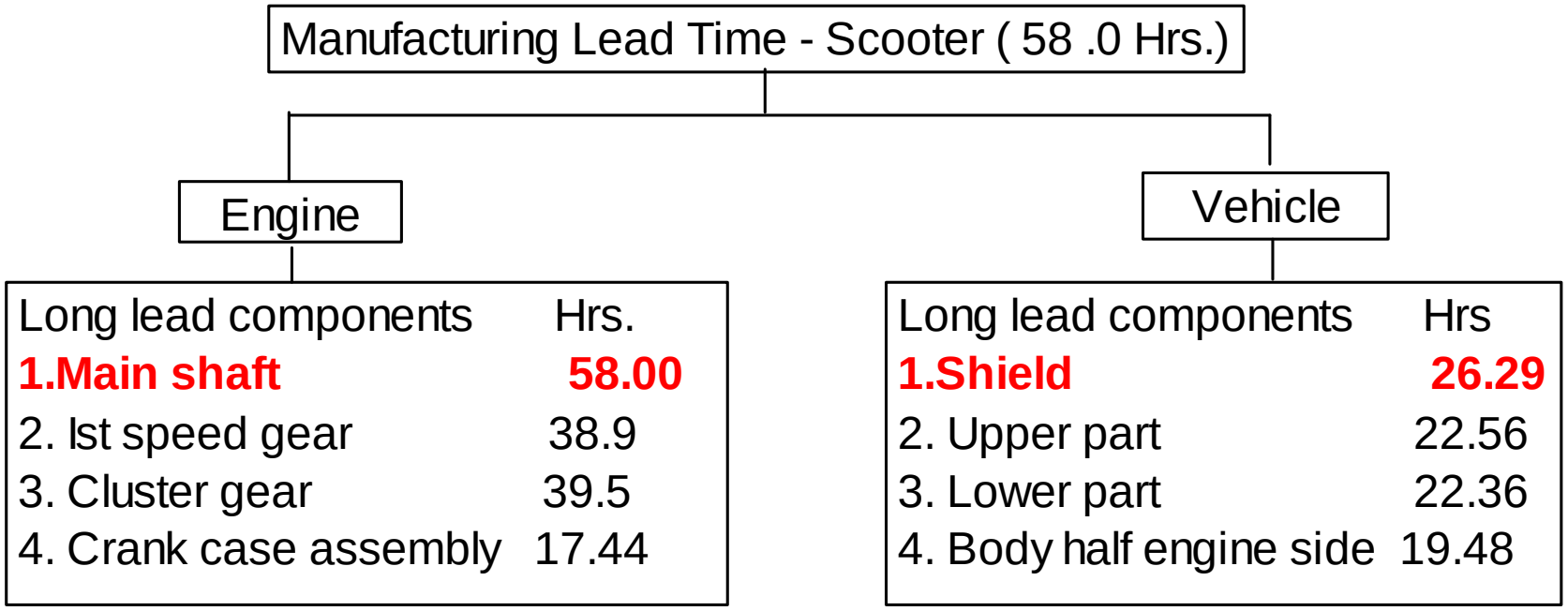
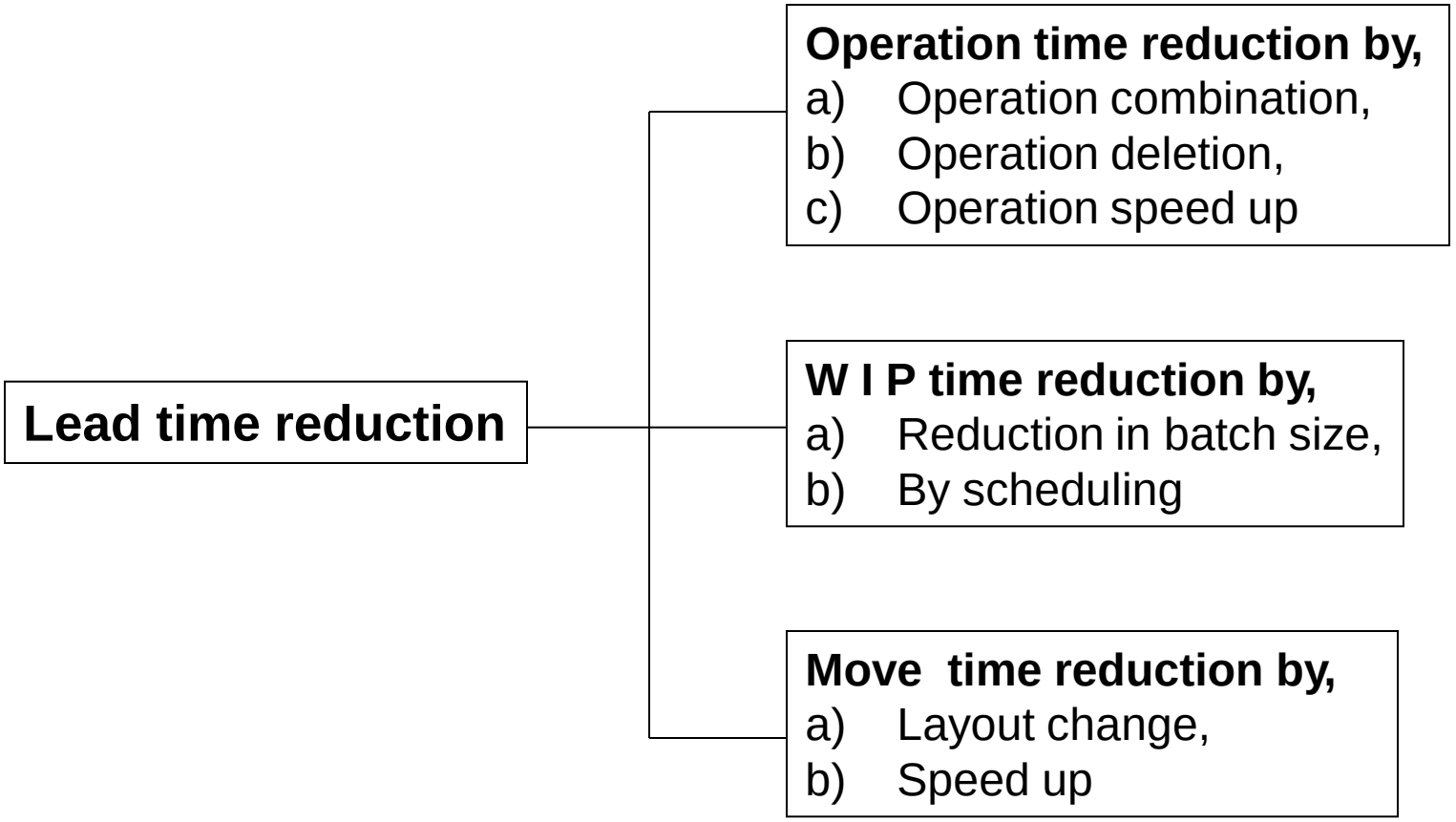
HOMEWORK


Manufacturing Lead Time - Scooter (58 .0 Hrs.)
Engine
Vehicle
Long lead components Hrs.
1.Main shaft 58.00
2. Ist speed gear 38.9
3. Cluster gear 39.5
4. Crank case assembly 17.44
Long lead components Hrs
1.Shield 26.29
2. Upper part 22.56
3. Lower part 22.36
4. Body half engine side 19.48

HOMEWORK

Kaizen idea - lead time reduction

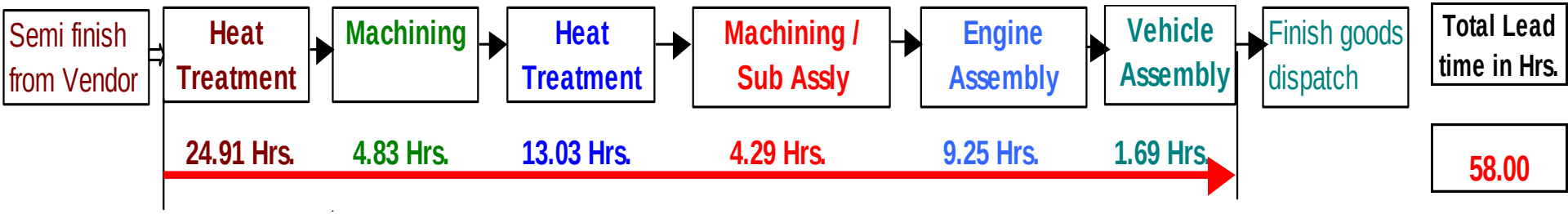
Lead time = Operation I.e.process time + W I P time + Move I.e. transportation time



HOMEWORK

Main shaft - Engine side

a. Process flow chart



b. Analysis of lead time

Process	Process Time in Hrs.	W I P Time in Hrs.	Move Time in Hrs.	Total time in Hrs.	Working Hrs./ Day	Lead time in Days
Heat Treatmet	23.41	1.25	0.25	24.91	24	1.04
Machining	3.75	1.00	0.08	4.83	7.83	0.62
Heat treatment	9.33	3.00	0.70	13.03	24	0.54
Machining	1.33	2.83	0.13	4.29	7.83	0.55
Eng.Assembly	1.40	7.75	0.10	9.25	7.83	1.18
Veh.Assembly	1.06	0.50	0.13	1.69	7.83	0.22
Total	**40.28**	**16.33**	**1.39**	**58.00**	**Lead time in Days - 4.14**	

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c. Kaizen done for lead time reduction

Process	Process Time	W I P Time	Move Time	
Heat Treatmet	**1**	0	0	
Machining	0	**1**	**1**	
Heat treatment	**3**	**2**	0	
Machining	0	**1**	0	
Eng.Assembly	0	**2**	0	
Veh.Assembly	0	0	0	
Total	**4**	**6**	**1**	**11**

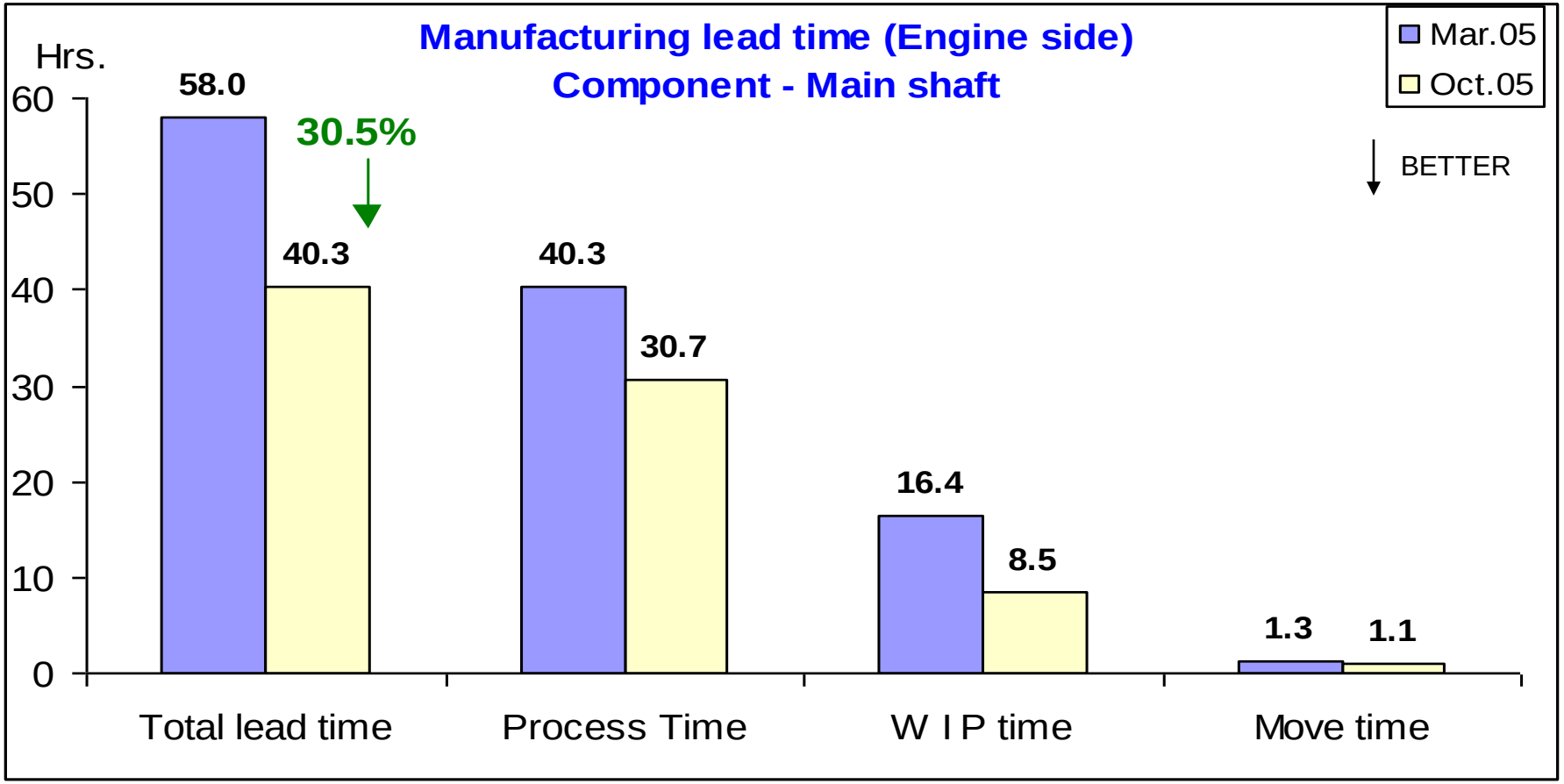
Kaizen on shop floor

d. Kaizen idea wise break up

Kaizen Idea	No.of kaizens implemented
Operation deletion	1
Operation speed up	4
Reduction in batch size	5
Layout change	1

HOMEWORK

e. Result



Ideal lead time if perfect single piece flow between processes : 26 Hrs.