OEE Exercise			
Steps	**Case 1**	**Case 2**	
No. shifts/day	3	3	
Operating time [min./shift]	480	480	
Total Operating Time [min./day]			
Planned stoppage [min./shift]			
Total planned stoppage [min./day]			
Net Operating Time [min./day]			
Planned downtime - changeover time, setups and			
adjustments time [min./shift]			
Downtime - planned and randomly [min./day]	200	400	
Running time [min./day]			
Target output [parts/day]			
Ideal Cycle Time [sec./parts]			
Actual output - good and rejects [parts/day]	925	800	
Actual Cycle Time [sec./parts]			
Rejects [parts/day]	3	10	
Good parts [parts/day]			
OEE components:			
Availability rate [%]			
Performance rate [%]			
Quality rate [%]			
OEE [%]			
Target OEE components:			
Availability rate [%]	95	95	
Performance rate [%]	92	92	
Quality rate [%]	100	100	
OEE [%]	87	87	
Deviation from the target:			
Availability rate [%]			
Performance rate [%]			
Quality rate [%]			
OEE [%]			

Production Information

Customer requirements: 25000 parts/month;
No. of week/month: 4;
No. days/week: 5;
Weekly production planning: 25000 : 4 = 6250 parts/week;
Daily production planning: 6250 : 5 = 1250 parts/week;
Net operating time per shift: 480 – 30 = 450 min/shift;

Takt time: (450 x 60): 1250 = 21.6 sec/part;
Ideal Cycle Time: 64 sec/part;
No. of necessary machines: 64 : 21.6 = 2.96: 3 machines (or shifts) / day.

Case 1: one type of part, one machine,one type of operation.
Average planned changeover/shift = 1.15 (after 35 parts);
changeover time = 17 min.

Case 2: many part types (4 part types:9000, 7500, 5000, 3500 parts), one machine, one type of operation.
Average planned changeover/shift = 1.15 (after 35 parts);
changeover time = 17 min.
Average setup and adjustment time/day = 30

Steps	Case 1	Case 2	
No. shifts/day	3	3	
Operating time [min./shift]	480	480	
Total Operating Time [min./day]	1440	1440	
Planned stoppage [min./shift]	30	30	
Total planned stoppage [min./day]	90	90	
Net Operating Time [min./day]	1350	1350	
Planned downtime - changeover time, setups and	20	45	
adjustments time [min./shift]			
Downtime - planned and randomly [min./day]	200	400	
Running time [min./day]	1150	900	
Target output [parts/day]	1250	1250	
Ideal Cycle Time [sec./parts]	64	64	
Actual output - good and rejects [parts/day]	925	800	
Actual Cycle Time [sec./parts]	74.4	67.5	
Rejects [parts/day]	3	10	
Good parts [parts/day]	922	790	
OEE components:			
Availability rate [%]	85.18	66.67	
Performance rate [%]	86.02	94.18	
Quality rate [%]	99.67	98.75	
OEE [%]	73.03	62.41	
Target OEE components:			
Availability rate [%]	95	95	
Performance rate [%]	92	92	
Quality rate [%]	100	100	
OEE [%]	87	87	
Deviation from the target:			
Availability rate [%]	9.82	28.33	
Performance rate [%]	5.98	-2.18	
Quality rate [%]	0.33	1.25	
OEE [%]	13.03	24.59	

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Net operating time per shift: 480 – 30 = 450 min/shift;

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Case 1: one type of part, one machine,one type of operation.
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changeover time = 17 min.

Case 2: many part types (4 part types:9000, 7500, 5000, 3500 parts), one machine, one type of operation.
Average planned changeover/shift = 1.15 (after 35 parts);
changeover time = 17 min.
Average setup and adjustment time/day = 30