Process Name	Time to process	Job Submission time
P1	7	3
P2	18	23
P3	16	34
P4	12	16
P5	19	7

Calculate Turn around time, Wait time and response time for following algorithms:

1. First come first serve

P1	P5	P4	P2	P3

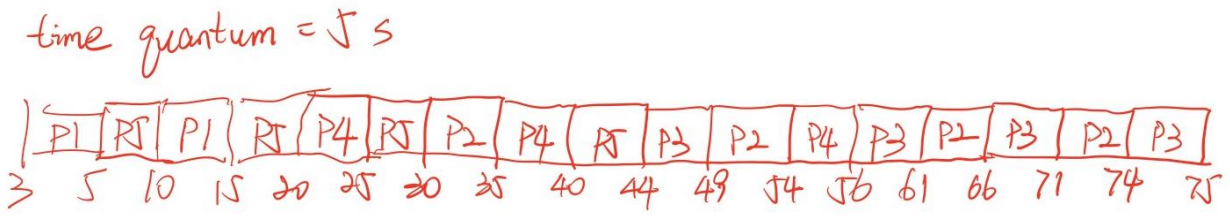
3 10 29 41 59 75

Turn Around Time (TAT) = Completion Time (CT) - Arrival Time (AT)
Waiting Time (WT) = Turn Around Time (TAT) - Burst Time (BT)

Process Name	AT	CT	TAT	WT	RT
P1	3	10	7	0	0
P2	23	59	36	18	18
P3	34	75	41	25	25
P4	16	41	25	13	13
P5	7	29	22	3	3

Avg. TAT = (7+36+41+25+22)/5 = 26.2
Avg. WT = (18+25+13+3)/5 = 11.8
Avg. RT = (18+25+13+3)/5 = 11.8

2. Round robin



Process Name	AT	CT	TAT	WT	RT
P1	3	15	12	5	0
P2	23	74	51	33	7
P3	34	75	41	25	10
P4	16	56	40	28	4
P5	7	44	37	18	1

Avg. TAT = (12+51+41+40+37)/5 = 36.2
Avg. WT = (5+33+25+28+18)/5 = 21.8
Avg. RT = (7+10+4+1)/5 = 4.4

3. Shortest job first

Preemptive SJF

P1	P5	P4	P5	P3	P2

3 10 16 28 41 57 75

Process Name	AT	CT	TAT	WT	RT
P1	3	10	7	0	0
P2	23	75	75 – 23 = 52	52 – 18 = 34	34
P3	34	57	57 – 34 = 23	23 – 16 = 7	7
P4	16	28	28 – 16 = 12	12 – 12 = 0	0
P5	7	41	41 – 7 = 34	34 – 19 = 15	3

Avg. TAT = (7+52+23+12+34)/5 = 25.6
Avg. WT = (34+7+15)/5 = 11.2
Avg. RT = (34+7+3)/5 = 8.8

Non-Preemptive SJF

P1	P5	P4	P3	P2

3 10 29 41 57 75

Process Name	AT	CT	TAT	WT	RT
P1	3	10	7	0	0
P2	23	75	75 – 23 = 52	52 – 18 = 34	34
P3	34	57	57 – 34 = 23	23 – 16 = 7	7
P4	16	41	41 – 16 = 25	25 – 12 = 13	13
P5	7	29	29 – 7 = 22	22 – 19 = 3	3

Avg. TAT = (7+52+23+25+22)/5 = 25.8
Avg. WT = (34+7+13+3)/5 = 11.4
Avg. RT = (34+7+13+3)/5 = 11.4

4. Longest job first

P1	P5	P4	P2	P3	P5	P2	P4	P1

3 7 16 23 34 50 60 67 72 75

Process Name	AT	CT	TAT	WT	RT
P1	3	75	72	65	0
P2	23	67	44	26	0
P3	34	50	16	0	0
P4	16	72	56	44	0
P5	7	60	53	34	0

Avg. TAT = (72+44+16+56+53)/5 = 48.2
Avg. WT = (65+26+44+34)/5 = 33.8
Avg. RT = 0