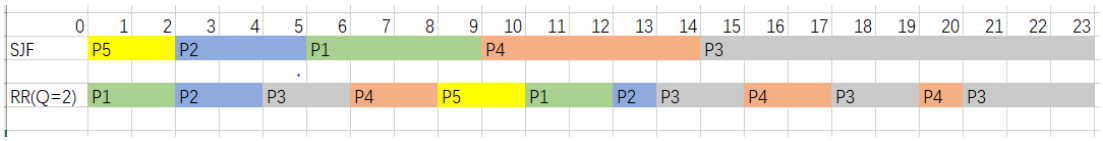
1)

a) The Gantt charts for SJF and RR| (quantum = 2) are shown below.



b) Turnaround time of each process for each algorithm are shown below.

	P1	P2	P3	P4	P5
SJF	9	5	23	14	2
RR(Q=2)	12	13	23	20	10

c) Waiting time of each process for each algorithm are shown below.

	P1	P2	P3	P4	P5
SJF	5	2	14	9	0
RR(Q=2)	8	10	14	15	8

d) Average waiting time over all processes for SJF is (5+2+14+9+0)/5 = 6 ms
Average waiting time over all processes for RR| (quantum = 2) is (8+10+14+15+8)/5 = 11 ms
SJF results in the minimum average waiting time 6 milliseconds.

2) All steps to satisfy all pending requests and the total distance in cylinders that the disk arm moves for SCAN and C-LOOK are listed below. Total number for SCAN is 7618 and total number for C-LOOK is 8984.

	1	2	3	4	5	6	7	8	9	10	11	12	Total
SCAN	2150	2400	3380	4760	4999	2074	1780	1514	1218	567	457	230	7618
C-LOOK	2150	2400	3380	4760	230	457	567	1218	1514	1780	2074		8984

SCAN: Distance = (4999-2150) + (4999-230) = 7618
C-LOOK: Distance = (4760-2150) + (2074 - 230) = 4454

3)

The function call to set Process Contention Scope did not succeed.
Linux does not allow Process Contention Scope. It uses only one-to-one model and schedule threads using only System Contention Scope.
The result after running the modified codes with pthread_attr_setscope and pthread_attr_getscope functions is shown below.

```
wuyue@wuyue-VirtualBox:~/Desktop$ gcc lab8.c -o lab8.o -pthread -lm
wuyue@wuyue-VirtualBox:~/Desktop$ ./lab8.o
Set PCS
PTHREAD_SCOPE_SYSTEM
Pi: 3.141629
wuyue@wuyue-VirtualBox:~/Desktop$
```