Score:_____   Name:_____
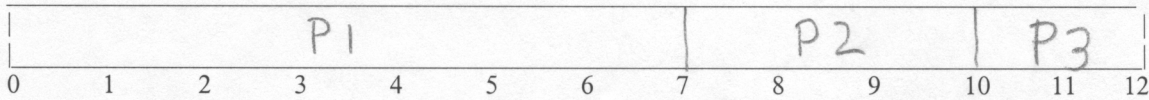
ECE 3055 Quiz - November 20, 2002
CPU Scheduling

The following processes arrive for execution at the times indicated. Use preemptive scheduling for SRTF and RR. Base all decisions on the information you have at the time the decision is made. At arrival time, the burst execution time is known. For RR, assume a process is in the ready queue just prior to arrival time i.e. in the queue just before a running process is stopped and added to the ready queue.
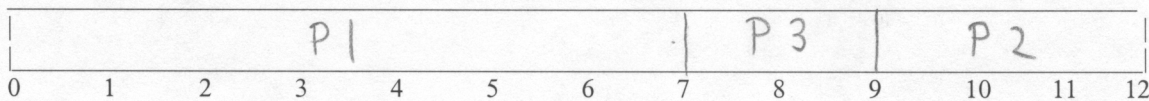
Process	Arrival Time	CPU Burst or Execution Time
P1	0.0ms	7ms
P2	1.0ms	3ms
P3	3.0ms	2ms

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Draw a Gantt chart using FCFS:

$$TT \quad \frac{7+(10-1)+(12-3)}{3}$$

$$WT \quad \frac{0+6+7}{3}$$

```
| 0   P1              7 |  P2   10 | P3  12 |
0   1   2   3   4   5   6   7   8   9   10  11  12
```

Draw a Gantt chart using SJF (no preemption):

$$TT = \frac{7+(9-3)+(12-1)}{3}$$

$$WT = \frac{0+(7-3)+(9-1)}{3}$$

```
| 0   P1              7 | P3  9 |  P2   12 |
0   1   2   3   4   5   6   7   8   9   10  11  12
```

Draw a Gantt chart using SRTF:

$$TT = \frac{12+(4-1)+(6-3)}{3}$$

$$WT = 5+0+\frac{1}{3}$$

```
| P1 |  P2  | P2 |  P3  |    P1        |
0   1   2   3   4   5   6   7   8   9   10  11  12
```
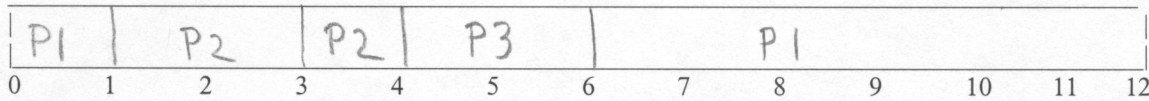
Draw a Gantt chart using RR with time slice = 2:

```
|  P1  |  P2  |  P1  |  P3  | P2 |   P1   |
0   1   2   3   4   5   6   7   8   9   10  11  12
```
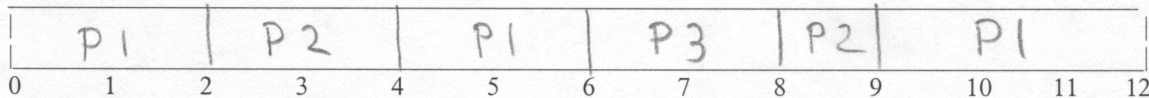
$$TT = \frac{12+(9-1)+(8-3)}{3}$$

$$WT = \frac{5+5+3}{3}$$

Fill in the table below:

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	Average Turnaround Time	Average Wait Time
FCFS	$8.333 \left(\frac{25}{3}\right)$	$4.333 \left(\frac{13}{3}\right)$
SJF (*no preemption*)	8	4
SRTF (*preemption*)	6	2
RR	$8.333 \left(\frac{25}{3}\right)$	$4.333 \left(\frac{13}{3}\right)$