COP4600 – Operating Systems – Spring 2016 – Optional Homework #1

Problem 1: Processor Scheduling

Using *each* of the following scheduling algorithms:

- First-Come-First-Served
- Shortest Job First (Non-Preemptive)
- Shortest Job First (Preemptive)
- Priority (Non-Preemptive)
- Priority (Preemptive)
- Round Robin (q = 3)

Draw the execution timeline for the bursts below. (Remember, the priority is only used in the Priority algorithms.) Also for each algorithm, after you have drawn the timeline, determine the per-process and average turnaround times and waiting times.

Process	Burst	Arrival	Priority
P1	6	1	3
P2	12	3	1
P3	2	5	5
P4	8	7	2
P5	3	9	4

Problem 2: Real-Time Scheduling

Using *each* of the following scheduling algorithms:

- Rate-Monotonic
- Earliest Deadline First

Draw the execution timeline from t = 0 to t = 200 for each set of bursts below.

Process	Period	Burst
P1	50	10
P2	90	20
P3	130	30

Process	Period	Burst
P1	50	10
P2	90	5
P3	130	90

Process	Period	Burst
P1	50	25
P2	90	45
P3	130	70

For each run of each algorithm, did the algorithm succeed or did it fail? If it failed, then why?