ECE 576 – Engineering of Computer Based Systems
Homework Assignment 3
Due Tuesday, April 21 *(beginning of lecture)*

1. *(10 points)* For the following set of tasks:

   a.) Determine the priority for each task using a rate monotonic priority assignment.
   b.) Does this task set pass the utilization test?
   c.) Is this task set schedulable? Justify your answer by providing a timeline that either demonstrates when a task misses its deadline or demonstrates that all task deadlines can be met. Be sure to clearly illustrate when any tasks are preempted by a higher priority task.

Task (T_i)	**Period (P_i)**	**Exec. Time (C_i)**
A	15	4
B	20	8
C	30	5

2. *(10 points)* For the following set of tasks:

   a.) Determine the priority for each task using a deadline monotonic priority assignment.
   b.) Does this task set pass the utilization test?
   c.) Is this task set schedulable? Justify your answer by providing a timeline that either demonstrates when a task misses its deadline or demonstrates that all task deadlines can be met. Be sure to clearly illustrate when any tasks are preempted by a higher priority task.

Task (T_i)	**Period (P_i)**	**Deadline (D_i)**	**Exec. Time (C_i)**
A	30	25	5
B	60	30	7
C	40	10	5
D	24	12	12

3. *(10 points)* For the tasks sets in problems 1 and 2, determine the response time for each task. According to the response time analysis, demonstrate whether or not each task set is schedulable.