Assignment # 7 Key

1. Consider the following set of independent tasks with associated task times:
(T1,4), (T2,5), (T3,2), (T4,7), (T5,1), (T6,4), (T7,8)
Fill in the schedules for these tasks under the associated strategies below.

Greedy using the list order above:

T1	*T1*	*T1*	*T1*	*T3*	*T3*	*T5*	*T6*	*T6*	*T6*	*T6*	*T7*	*T7*	*T7*	*T7*	*T7*	*T7*	*T7*	*T7*
T2	*T2*	*T2*	*T2*	*T2*	*T4*	*T4*	*T4*	*T4*	*T4*	*T4*	*T4*							

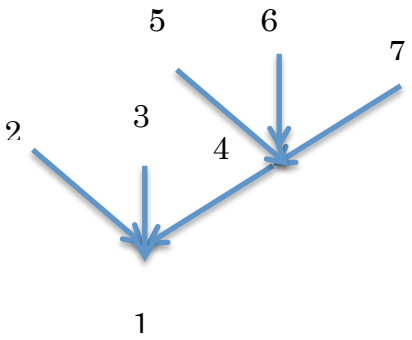
19 units

Greedy using a reordering of the list so that longest running tasks appear earliest in the list:

T7	*T7*	*T7*	*T7*	*T7*	*T7*	*T7*	*T7*	*T1*	*T1*	*T1*	*T1*	*T6*	*T6*	*T6*	*T6*			
T4	*T4*	*T4*	*T4*	*T4*	*T4*	*T4*	*T2*	*T2*	*T2*	*T2*	*T2*	*T3*	*T3*	*T5*				

16 units (optimal)

2. Consider a very simple unit execution time tree with just 7 tasks that we wish to schedule on 2 processors. The tree is below.



a.) Show the Gantt chart associated with the optimal schedule based on the assigned priorities.

T7	*T5*	*T4*	*T1*															
T6	*T3*	*T2*																

b.) Show the Gantt chart associated with some optimal schedule when this is treated as an anti-tree (dependency arrows reversed).

T1	*T4*	*T5*	*T7*															
	T2	*T3*	*T6*															

c.) Show the Gantt chart associated with the schedule of this anti-tree when inverted priorities are used (1 is highest, 2 is second highest, etc.). Comment on any observation you might have of this versus the schedule in **(b)**.

T1	*T2*	*T4*	*T5*	*T7*														
	T3		*T6*															

This schedule ignores the importance of completing T4 to open up T5, T6 and T7. In other words, it is not cognizant of the importance of critical paths.