

IOE 543

HW 3

Due in class on 09/30

1. Problem 3.7 Pinedo.
2. NASA has one space shuttle with which they plan to launch 8 space stations. Each station is specifically designed to perform certain astronomical observations, with each station being equally important. The stations must each be placed in orbit by a certain date or it will be useless. Given the data below, determine the stations that should be sent into space and in what order. Assume that the launching and construction sequence starts from January 1, 2005.

Station	Time to load into shuttle, launch, build in space and return	Must be in orbit by the 1 st of
1	1 year, 2 months	April, 2009
2	5 months	Jan., 2006
3	11 months	Aug., 2006
4	3 months	March, 2009
5	1 year, 8 months	Sept., 2008
6	4 months	Aug., 2005
7	7 months	Dec., 2005
8	2 months	June, 2007

3. Show that $L_{\max} \leq T_{\max} \leq \sum T_j$. Use this fact and a solution method for $1 \parallel L_{\max}$ to solve problem 3.9 in Pinedo.
4. Consider the problem $1 \parallel \sum C_j^2$. Propose an algorithm for this problem, and prove that it is optimal.