IEEM 101 Industrial Engineering and Modern Logistics
Fall 03, Assignment 1
Due: Wed, 1 October

Q1. A paper company produces three grades of paper from different combinations of 4 types of wood pulp. The table below gives the data about the availability of pulp, constitution of the paper types, and the profits from each type. We need to determine how much of each type of paper to produce in order to maximize our profits. Formulate the problem as a linear program.

Paper type	tons of pulp / tons of paper				Profit / ton
	1	*2*	*3*	*4*	
A	0	0	1.3	2.5	210
B	1.9	0.5	2.1	0	400
C	2.4	0	0.8	0	600
Tons available /month	1500	800	500	2000	

Q2. Using the graphical model for the Product Mix problem, answer the following:
(i) What is the change in the profit (from the current optimal point) for 1 unit change in available amount of potash?
(ii) What is the change in profit (from the current optimal point) for 1 unit change in the available amount of rock phosphate?

Q3. Use MS Excel to solve for question 1 above. The answer must contain a printout showing the model and a printout of the *Answer* page after running the solver.