

Math 30210 --- Introduction to Operations Research

Quiz 4 --- Wednesday September 26, 2007

Name: _____

Instructions: This is a closed-book quiz. Please do not use notes.

The picture below shows a simplex tableau for a maximization problem involving six variables, $x_1, x_2, x_3, s_{x4}, s_{x5}$ and s_{x6} , and three constraints. (The tableau has been generated using TORA.) Currently the basic variables are s_{x4}, s_{x5} and x_1 .

- 1) What are the non-basic variables?
- 2) What are the values of all the variables at the current basic feasible solution?
- 3) In the next step of the simplex algorithm, what will be the entering variable?
- 4) And what will be the departing variable?
- 5) After the next step, will the optimal have been reached? Justify your answer.

Basic	x_1	x_2	x_3	s_{x4}	s_{x5}	s_{x6}	Solution
z (max)	0.00	2.00	-5.00	0.00	0.00	1.00	7.00
s_{x4}	0.00	0.75	1.00	1.00	0.00	-0.25	3.25
s_{x5}	0.00	3.50	0.00	0.00	1.00	-0.50	0.50
x_1	1.00	0.25	-0.50	0.00	0.00	0.25	1.75