Math 30210 — Introduction to Operations Research

Quiz 9 – Wednesday November 14, 2007

NAME: _____

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

Consider the following linear programming problem:

Minimize
$$4x_1 + 2x_2 + x_3$$

subject to $x_1, x_2, x_3 \geq 0$ and

$$\begin{aligned} x_1 + x_2 + x_3 &= 1 \\ 3x_1 - 4x_2 + x_3 &\geq 2. \end{aligned}$$

1. Set up an initial simplex tableau that would be suitable for solving the problem using the dual simplex method. (You may use the skeleton below).

2. Identify the initial basic solution, and say why it is an appropriate basic solution for the implementation of the dual simplex method.

3. Identify the departing basic variable in the first iteration of the dual simplex method.

4. Identify the entering basic variable in the first iteration of the dual simplex method.