Due: Friday, February 3rd (drop box, 3 p.m.)

Reading

For Tuesday, January 24th, Chapter 3, however for Sections 3.3 and 3.4 it is enough just to know the results rather than going into the proofs.

For Friday, January 27th, Chapter 4.

For Tuesday, January 31st, Chapter 5 through Section 5.

For Friday, February 3rd, Chapter 5, through Section 8.

Assignment exercises to hand in

Chapter 2, problems 6, 7 and 18.

Chapter 3, problems 2 and 5.

Suppose that you are solving a problem using the simplex method from the following initial feasible dictionary:

$$
\begin{array}{rcrrrrrrr}
\zeta & = & & 4x_1 & + & 3x_2 & - & x_3 \\
\hline
w_1 & = & 3 & - & x_1 & - & x_2 & + & 3x_3 \\
w_2 & = & 4 & - & 2x_1 & + & 3x_2 & - & 4x_3 \\
w_3 & = & 6 & - & 3x_1 & + & 3x_2 & - & 2x_3
\end{array}
$$

a. List all pairs (x_r, x_s) such that x_r could be the entering variable and x_s could be the leaving variable.

b. List all such pairs if the largest coefficient rule is used for choosing the entering variable.

c. List all such pairs if Bland's rule for choosing the entering and leaving variables is used.

Chapter 4, problem 2.

Note that you can use the on-line pivot tools from Vanderbei's homepage to check your calculations.

Some other exercises you should try

Try problems 3.3 and 4.5 for additional simplex practice.

Chapter 3, problem 4.

It is interesting, but not essential, to work through the exercises in Chapter 4. These exercises complete the analysis of a version of simplex on the Klee-Minty cube.

Reminders

The early drop deadline is Wednesday, January 25th.

The late drop deadline is Wednesday, February 8th.