Homework 4

Due: Friday, March 4, 2016 at 2 p.m.

- TA office hours are Tuesdays and Thursdays 7–9pm in CIT 219.
- If you absolutely can’t go to office hours, you can contact the staff at cs1951gtas@cs.brown.edu.
- If you work together on the homework, include your partners’ names at the top of your handin. However, your solutions must be written independently. The full collaboration policy can be found in the syllabus.
- Please typeset your solutions in LaTeX with the template provided on the course website.
- You must hand in the printed solutions before class.

Problem 1

Exercise 12.3 from the textbook (pg. 220).

Problem 2

Exercise 12.4 from the textbook (pg. 220).

Problem 3

Exercise 12.5 from the textbook (pg. 220).

Mission 1

In the next project, which will be part of the midterm and will be out in a couple of weeks, you will be using industrial-strength modeling languages (AMPL) and optimization solvers for Linear, Integer, Nonlinear, and Quadratic Programming.
We strongly suggest that you start now to prepare for the project by getting familiar with the software you will be using.

a. Go to the Software page on the course website and download and install the software for your preferred platform. The course staff will answer questions and issues with installation this week, but not once the project is out.


c. Rewrite some of the models you developed for the first project into “full fledged“ AMPL, and solve them using CPLEX. The goal is to become familiar with the CPLEX output.

d. Read chapter 20 of the AMPL book, to get familiar with modeling and solving integer programs using CPLEX.

e. Formulate the problems from Chapter 11 and 12 of the Cournejols-Tüüncü book in AMPL and solve them.