Due: Wednesday, January 15th (11:59 p.m. PT.)

References are to the course textbook (Baker, 3rd edition), except as noted.

Reading

You should look briefly at Chapter 1. Sections 1.1 and 1.3 are about mathematical modelling generally. They may or may not make sense to you. Hopefully they will make sense by the end of the course. Sections 1.2, 1.4 and 1.5 are about spreadsheets, and how to use `Excel`'s `Solver` utility.

For Wednesday, January 8th, Chapter 2, Sections 1 and 2.

For Monday, January 13th, Chapter 2, Sections 3 and 5.

For Wednesday, January 15th, Chapter 2, Section 4.

Note that in Chapter 2, Sections 1 through 4 are about forming mathematical models, while Section 5 is about solving the models.

You should also look at the handbooks on mathematical modelling provided by SIAM as part of their *Math-Works Mathematical Modeling Challenge*. The first one, Math Modeling: Getting Started and Getting Solutions, includes a number of tips on both mathematical modelling and writing solutions. In particular, please have a look at Chapter 7 (pages 40-44), which give some good advice on writing technical reports.

Assignment exercises to hand in

Questions 1 and 2 must be solved in an `Excel` spreadsheet, and must be accompanied by well-written solutions. Submissions will be via upload to `Crowdmark` for the written solutions and `Canvas` for the `Excel` files. Submit one `.pdf` and one `Excel` file per question for questions 1 and 2, and a `.pdf` file for question 3.

1. Exercise 2.2.

2. Exercises 2.12 and 2.13. Note these are among the supplementary exercises.

3. Write a brief (up to one page) mathematical autobiography about your experience so far with mathematics. It should include details of your educational background, along with your short-term and long-term mathematical goals. Please mention at least one teacher who has had an impact on how you think about mathematics. Also include details on what mathematical subjects you prefer, and why.

Organize your answer into paragraphs, each discussing one specific point. Make short and clear sentences which are grammatically correct. Please take the time to reflect on what math has been in your life up until now. Note that even mundane things can be interesting if you write them well.

Some other exercises you might try

4. The textbook has a nice groups of of worthwhile problems. There are many additional formulation problems available on the Web, such as the following solved problems authored by J.E. Beasley: `http://people.brunel.ac.uk/~mastjjb/jeb/or/lpmore.html`.