

# Fourth Homework Assignment for Math 308

**Due: Thursday, March 6th.**

All section references are to the Strayer text.

Problems to hand in:

Chapter 4 exercises 2, 5 d., e., 6, 8, 11.

Chapter 5 exercise 3.

Write the dual of the following non-canonical optimization problem:

$$\begin{aligned} & \text{minimize} && x_1 - x_2 - 8x_3 \\ & \text{subject to} && 2x_1 - x_2 + x_3 \leq 4, \\ & && x_1 + x_2 - 3x_3 = 5, \\ & && x_1 + 2x_2 - 3x_3 \geq 2, \\ & && x_1 \geq 0, x_2 \leq 0 \end{aligned}$$

Write the dual of :

$$\text{maximize } c^t x \text{ subject to } Ax = b$$

What does complementary slackness tell us about this problem and its dual?

Some other problems you should try:

The remaining problems in Chapter 4 are good practice.

Reading for the next two weeks:

For Tuesday, February 26th, Sections 4.5, 4.6 and 4.7.

For Thursday, February 28th, Section 5.1.

For Tuesday, March 4th, Sections 5.2 and 5.3.

For Thursday, March 6th, Section 5.4.

Thinking about a math degree? Career options?

Consider attending the Math department information sessions, Wednesday, February 27th, 4 p.m. in Shrum Science K9509 (Burnaby), and at 12:30 p.m. on Thursday, February 28th, in room 5360 (Surrey). Also note that the SFU Surrey open house is Thursday evening.