

University of Toronto at Scarborough
Department of Computer and Mathematical Sciences

Linear Programming and Optimazation

MATB61 Winter 2020

Assignment # 4

You are expected to work on this assignment prior to your tutorial in the week of Feb. 3rd. You may ask questions about this assignment in that tutorial. In your tutorial in the week of **Feb. 10th**, you will be asked to write **a quiz** based on this assignment and/or related material from the lectures in week 4, and textbook readings.

Midterm Test
Wednesday, February 26th, 5 – 7pm
IC120, IC130

Note: 1. For checking your answers with Simplex method, you may use the tool on the web

<http://www.zweigmedia.com/RealWorld/simplex.html>

2. There is a quiz in the week of Feb 3rd, based on the assignment 2&3 and/or related material from the lecture in week 2&3.

The following problems are not to be handed-in.

Textbook: Elementary Linear Programming With Applications
B. Kolman & R. Beck, 2nd edition

Read: Chapter 2 section 1

Problems:

Section 2.1 #1 - #9, #16, #17, #19 - #23

In addition:

1. Solve Maximize $z = 2x + y$
Subject to
 $3x + 5y \leq 15$
 $6x + 2y \leq 24$
 $x, y \geq 0$

by Graphic solution and Simplex method separately. Indicate corresponding corner point in each tableau of Simplex method.

2. A meat packing plant produces 480 hams, 400 pork bellies, and 230 picnic hams every day; each of these products can be sold either fresh or smoked. The total number of hams, bellies, and picnics that can be smoked during a normal working day is 420; in addition, up to 250 products can be smoked on overtime at a higher cost. The net profits are as follows:

	Fresh	Smoked on regular time	Smoked on overtime
Hams	\$8	\$14	\$11
Bellies	\$4	\$12	\$7
Picnics	\$4	\$13	\$9

Find the schedule that maximizes the total net profit.

Note: There are answers at the back of the textbook for the odd number questions.