

Homework 5

4.8 Solution to PM4:

$x_1 = 0$ acres of tomatoes

$x_2 = 0$ acres of green peppers

$x_3 = 100$ acres of cucumbers

Yield = \$40,000.

The acreage is not governing the decision -- it is the amount of labor.

4.16 Solution using Program Simplex:

$I_1 = 8, I_2 = 2, I_3 = 4, I_4 = 2$ amps, $f^* = 108$ watts.

HW 5 Complete phase I (feasible solution) manually. Solve the complete problem using computer.

Check using a simple 2D plot on graph paper.

Maximize $x_1 + 4x_2$

Subject to

$$x_1 + 2x_2 \leq 5$$

$$x_1 + x_2 = 4$$

$$x_1 - x_2 \geq 3$$

$$x_1, x_2 \geq 0$$

NV	NL	NG	NE
2	1	1	1

NL <=, NG >=, NE = Constraints (All B(I) on the right hand side must be non-negative)

$$1 \quad 2 \quad 5$$

$$1 \quad -1 \quad 3$$

$$1 \quad 1 \quad 4$$

Objective function to be MAXIMIZED

$$1 \quad 4$$

RESULTS

Solution (See Tableau on Sheet2)

Variable Value

$$3 \quad 0.5$$

$$1 \quad 3.5$$

$$2 \quad 0.5$$

Maximum Function Value =

5.5