

UNIVERSITY OF MASSACHUSETTS

Isenberg School of Management

Department of Finance and Operations Management

FOMGT 353-Introduction to Management Science

Homework #3 – The Simplex Method.

Show your work completely and in an organized manner to receive maximum credit. Correct answers without supporting calculations or diagrams will not receive credit. Incorrect answers using the correct method and a good presentation will receive substantial credit.

My name is:

The Fred Basset Candy Company makes Fudge and Chocolate Bars. They have 100 lbs of Molasses, 36 lbs of Cocoa and 60 liters of Milk on hand and they need to decide which products to make, today, and in what quantities to make the highest contribution to profits.

A Fudge Bar uses a pound of Molasses, .3 of a pound of Cocoa and .2 liters of Milk. Only .35 lbs of Molasses, .2 lbs of Cocoa and half a liter of milk are needed for a Chocolate Bar.

A pound of Molasses costs \$1., a pound of Cocoa costs 50 cents and a liter of milk 80 Cents. A Fudge Bar is sold for \$1.61 and a Chocolate Bar for \$1.

1. Formulate the Linear Program

2. Convert the LP to Standard Form.

3. Convert the LP to Canonical Form.

4. What is the Initial Basic Feasible Solution?

5. Construct the Initial Simplex Tableau.

Basis	Cj						Bi
	Zj						
	Cj - Zj						

6. Which Variable is the Entering Variable and which variable is the Leaving Variable at this point in the Simplex Method.

7. Solve the Problem using the Simplex Method

Basis	C _j						B _i
	Z _j						
	C _j - Z _j						

Basis	Cj						Bi
Zj							
Cj - Zj							

Basis	Cj						Bi
Zj							
Cj - Zj							

Basis	Cj						Bi
Zj							
Cj - Zj							

Basis	Cj						Bi
Zj							
Cj - Zj							

Basis	Cj						Bi
Zj							
Cj - Zj							