

學號：

姓名：

國立中山大學 97 學年度第 2 學期資訊工程學系資工數學

Quiz #7

2009/05/20

Write in normal form and solve by the simplex method, assuming all  $x_j$  to be nonnegative.

1. Minimize  $f = 5x_1 - 20x_2$  subject to  $-2x_1 + 10x_2 \leq 5$ ,  $2x_1 + 5x_2 \leq 10$  (30%)

標準形式  $z = f(x_1, x_2)$

2. Maximize  $z = 40x_1 + 88x_2$  subject to  $2x_1 + 8x_2 \leq 60$ ,  $5x_1 + 2x_2 \leq 60$ ,  $x_1 \geq 0$ ,  $x_2 \geq 0$  (30%)

$$z - 40x_1 - 88x_2 = 0$$

標準形式  $2x_1 + 8x_2 + x_3 = 60$

$$5x_1 + 2x_2 + x_4 = 60$$

學號：

姓名：

3. Maximize the daily output in producing  $x_1$  glass plates by a process  $P_1$  and  $x_2$  glass plates by a process  $P_2$  subject to the constraints (labor hours, machine hours, raw material supply)
- $$2x_1 + 3x_2 \leq 130, \quad 3x_1 + 8x_2 \leq 300, \quad 4x_1 + 2x_2 \leq 140 \quad (40\%)$$
- (If in a step you have a choice between pivots, take the one that comes first in the column considered.)

標準型式  $z - x_1 - x_2 = 0$