Abdelhamid Mehri Constantine 2 University IFA Department

NTIC Faculty M1 STIC 2023/2024

TD2

Exercise 1

Use the simplex algorithm to solve the following problems:

Problem 1:

Maximize: $Z = 3x_1 + 2x_2$

Subject to:

$$2x_1 + x_2 \le 4$$

$$x_1 + 2x_2 \le 5$$

$$x_1, x_2 \ge 0$$

Problem 2:

Maximize: $Z = 5x_1 + 4x_2$

Subject to:

$$3x_1 + 2x_2 \le 12$$

$$x_1 + 4x_2 \le 8$$

$$x_1, x_2 \ge 0$$

Exercise 2

Use the simplex algorithm to solve the wooden toys manufacturing problem.

Exercise 3

Maximize: $Z=3x_1+2x_2+4x_3$

Subject to:

$$2x_1+x_2+3x_3 \le 5$$

$$x_1+2x_2+x_3 \le 4$$

$$x_1, x_2, x_3 \ge 0$$