Simplex

Operations Research

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Simplex Algorithm

The simplex is a method to solve lineal programming problems. This is a mechanical method that search for the best or optimal solution for a lineal programming(LP) problem. It was invented by George Danzig in 1947. It uses operations over a matrix to search for the optimal solution. It begin from a feasible region and it starts to do some operations, depending if you are maximizing or minimizing that search for the candidate column and the pivot, and after all the numbers are positive or negative, depends if maximizing or minimizing, that it give you the best solution.

Original Problem

Problema sin nombre

Maximize

- $Z = -1x1$

Constraints

1. $1x1 \leq 22$

Initial Table

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Z	x1	s_1	•
1	-1	0	0
0	1	1	22

Cuadro 1: Initial Table.

Final Table

Final Table

Z	x1	s_1	•
1	0	1	22
0	1	1	22

Cuadro 2: Final Table.

Solution

Solution

Optimal solution

Problema sin nombre

- $Z = 22$
- $x_1 = 22$

Especial Cases

The problem did not have special cases

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