

# Símplex

## Operations Research

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# Algoritmo Símplex

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# Tabla inicial

<b>Z</b>	<b><math>x_1</math></b>	<b><math>x_2</math></b>	<b><math>s_1</math></b>	<b><math>e_1</math></b>	<b><math>a_1</math></b>	<b><math>a_2</math></b>	<b>•</b>
1.0	-2.0	-3.0	0	0	-1.0M	-1.0M	0
0.0	0.5	0.2	1.0	0.0	0.0	0.0	4.0
0.0	1.0	3.0	0.0	-1.0	1.0	0.0	20.0
0.0	1.0	1.0	0.0	0.0	0.0	1.0	10.0

**Cuadro 1:** Tabla inicial.

## Tabla intermedia 1

<b>Z</b>	<b>x<sub>1</sub></b>	<b>x<sub>2</sub></b>	<b>s<sub>1</sub></b>	<b>e<sub>1</sub></b>	<b>a<sub>1</sub></b>	<b>a<sub>2</sub></b>	<b>•</b>
1.0	-2.0+2.0M	-3.0+4.0M	0	-1.0M	0	0	30.0M
0.0	0.5	0.2	1.0	0.0	0.0	0.0	4.0
0.0	1.0	3.0	0.0	-1.0	1.0	0.0	20.0
0.0	1.0	1.0	0.0	0.0	0.0	1.0	10.0

**Cuadro 2:** Tabla intermedia 1, con las columnas  $a_i$  canonizadas.

## Tabla intermedia #1

<b>Z</b>	<b>x<sub>1</sub></b>	<b>x<sub>2</sub></b>	<b>s<sub>1</sub></b>	<b>e<sub>1</sub></b>	<b>a<sub>1</sub></b>	<b>a<sub>2</sub></b>	<b>•</b>
1.0	-2.0+2.0M	-3.0+4.0M	0	-1.0M	0	0	30.0M
0.0	0.5	0.2	1.0	0.0	0.0	0.0	4.0
0.0	1.0	3.0	0.0	-1.0	1.0	0.0	20.0
0.0	1.0	1.0	0.0	0.0	0.0	1.0	10.0

**Cuadro 3:** Tabla intermedia 1, durante el pivoteo.

## Tabla intermedia #2

<b>Z</b>	<b>x<sub>1</sub></b>	<b>x<sub>2</sub></b>	<b>s<sub>1</sub></b>	<b>e<sub>1</sub></b>	<b>a<sub>1</sub></b>	<b>a<sub>2</sub></b>	<b>•</b>
1.0	-1.0+0.7M	0	0	-1.0+0.3M	1.0+-1.3M	0	20.0+3
0.0	0.4	0.0	1.0	0.1	-0.1	0.0	2.3
0.0	0.3	1.0	0.0	-0.3	0.3	0.0	6.7
0.0	0.7	0.0	0.0	0.3	-0.3	1.0	3.3

**Cuadro 4:** Tabla intermedia 2, con la columna de 3 canonizada.



## Tabla intermedia #2

<b>Z</b>	<b><math>x_1</math></b>	<b><math>x_2</math></b>	<b><math>s_1</math></b>	<b><math>e_1</math></b>	<b><math>a_1</math></b>	<b><math>a_2</math></b>	<b>•</b>
1.0	$-1.0+0.7M$	0	0	$-1.0+0.3M$	$1.0+-1.3M$	0	$20.0+3$
0.0	0.4	0.0	1.0	0.1	-0.1	0.0	2.3
0.0	0.3	1.0	0.0	-0.3	0.3	0.0	6.7
0.0	0.7	0.0	0.0	0.3	-0.3	1.0	3.3

**Cuadro 5:** Tabla intermedia 2, durante el pivoteo.

## Tabla intermedia #3

<b>Z</b>	<b>x<sub>1</sub></b>	<b>x<sub>2</sub></b>	<b>s<sub>1</sub></b>	<b>e<sub>1</sub></b>	<b>a<sub>1</sub></b>	<b>a<sub>2</sub></b>	<b>•</b>
1.0	0	0	0	-0.5+0.0M	0.5+-1.0M	1.5+-1.0M	25.0+-0.0M
0.0	0.0	0.0	1.0	-0.1	0.1	-0.6	0.3
0.0	0.0	1.0	0.0	-0.5	0.5	-0.5	5.0
0.0	1.0	0.0	0.0	0.5	-0.5	1.5	5.0

**Cuadro 6:** Tabla intermedia 3, con la columna de 2 canonizada.

# Tabla final

<b>Z</b>	<b>x<sub>1</sub></b>	<b>x<sub>2</sub></b>	<b>s<sub>1</sub></b>	<b>e<sub>1</sub></b>	<b>a<sub>1</sub></b>	<b>a<sub>2</sub></b>	<b>•</b>
1.0	0	0	0	-0.5+0.0M	0.5+-1.0M	1.5+-1.0M	25.0+-0.0
0.0	0.0	0.0	1.0	-0.1	0.1	-0.6	0.3
0.0	0.0	1.0	0.0	-0.5	0.5	-0.5	5.0
0.0	1.0	0.0	0.0	0.5	-0.5	1.5	5.0

**Cuadro 7:** Tabla final.