Interfaz de usuario gráfica, Texto, Aplicación

Descripción generada automáticamente

Agregamos las variables de holgura

60X1 + 25 X2 + 20 X3+ s1 = 100000

X1 + s2 = 60000

X2 + s3 = 25000

X3+s4=30000

Con x mayor a cero

Con la tabla queda:

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | X1 | X2 | X3 | S1 | S2 | S3 | S4 | Solución |
| Z | -7 | -3 | -3 | 0 | 0 | 0 | 0 | 0 |
| S1 | 60 | 25 | 20 | 1 | 0 | 0 | 0 | 100000 |
| S2 | 60 | 0 | 0 | 0 | 1 | 0 | 0 | 60000 |
| S3 | 0 | 25 | 0 | 0 | 0 | 1 | 0 | 25000 |
| S4 | 0 | 0 | 20 | 0 | 0 | 0 | 1 | 30000 |

Entra x1 y sale s2

Para Z multiplicamos el renglón pivote por 7 y sumamos Z+x1

Para s1 multiplicamos el renglón pivote por 60 y restamos s1-x1

Para s2 multiplicamos el renglón pivote por 60 y restamos s2-x1

Para s3 multiplicamos el renglón pivote por 0 y restamos s3-x1

Para s4 multiplicamos el renglón pivote por 0 y restamos s4-x1

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | X1 | X2 | X3 | S1 | S2 | S3 | S4 | Solución |
| Z | 0 | -3 | -3 | 0 | 0.116 | 0 | 0 | 7000 |
| S1 | 0 | 25 | 20 | 1 | 1 | -1 | 0 | 40000 |
| X1 | 1 | 0 | 0 | 0 | 0.016 | 0 | 0 | 1000 |
| S3 | 0 | 25 | 0 | 0 | 0 | 1 | 0 | 25000 |
| S4 | 0 | 0 | 20 | 0 | 0 | 0 | 1 | 30000 |

Entra x2 y sale s3

Para Z multiplicamos el renglón pivote por 3 y sumamos Z+x2

Para s1 multiplicamos el renglón pivote por 25 y restamos s1-x2

Para x1 multiplicamos el renglón pivote por 0 y restamos x1-x2

Para s3 multiplicamos el renglón pivote por 25 y restamos s3-x2

Para s4 multiplicamos el renglón pivote por 0 y restamos s4-x2

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | X1 | X2 | X3 | S1 | S2 | S3 | S4 | Solución |
| Z | 0 | 0 | -3 | 1 | 0.116 | 0.12 | 0 | 10000 |
| S1 | 0 | 0 | 20 | 0 | 1 | -1 | 0 | 15000 |
| X1 | 1 | 0 | 0 | 0 | 0.016 | 0 | 0 | 1000 |
| X2 | 0 | 1 | 0 | 0 | 0 | 0.04 | 0 | 1000 |
| S4 | 0 | 0 | 20 | 0 | 0 | 0 | 1 | 30000 |

Entra x3 y sale s1

Para Z multiplicamos el renglón pivote por 3 y sumamos Z+x3

Para s1 multiplicamos el renglón pivote por 20 y restamos s1-x3

Para x1 multiplicamos el renglón pivote por 0 y restamos x1-x3

Para x2 multiplicamos el renglón pivote por 0 y restamos x2-x3

Para s4 multiplicamos el renglón pivote por 20 y restamos s4-x3

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | X1 | X2 | X3 | S1 | S2 | S3 | S4 | Solución |
| Z | 0 | 0 | 1 | 0.15 | -0.033 | -0.03 | 0 | 12250 |
| X3 | 0 | 0 | 0 | 0.05 | -0.05 | -0.05 | 0 | 750 |
| X1 | 1 | 0 | 0 | 0 | 0.016 | 0 | 0 | 1000 |
| X2 | 0 | 1 | 0 | 0 | 0 | 0.04 | 0 | 1000 |
| S4 | 0 | 0 | 0 | 0 | -1 | 1 | 1 | 15000 |

Entra s2 y sale s4

Para Z multiplicamos el renglón pivote por 0.15 y sumamos Z+ s2

Para s1 multiplicamos el renglón pivote por 0.05 y restamos s1- s2

Para x1 multiplicamos el renglón pivote por 0.016 y restamos x1- s2

Para x2 multiplicamos el renglón pivote por 0 y restamos x2- s2

Para s4 multiplicamos el renglón pivote por 1 y restamos s4-s2

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | X1 | X2 | X3 | S1 | S2 | S3 | S4 | Solución |
| Z | 0 | 0 | 0 | 0.116 | 0 | 0.0033 | 0.03 | 12750 |
| X3 | 0 | 0 | 1 | 0 | 0 | 0 | 0.05 | 1500 |
| X1 | 1 | 0 | 0 | 0.016 | 0 | -0.016 | -0.016 | 750 |
| X2 | 0 | 1 | 0 | 0 | 0 | 0.04 | 0 | 1000 |
| S2 | 0 | 0 | 0 | -1 | 1 | 1 | 1 | 15000 |

Llegamos a la solución óptima con

Z=12750 x1=750, x2=1000 y x3=1500