Texto, Carta

Descripción generada automáticamente

**Representación gráfica:**

Gráfico, Gráfico de líneas

Descripción generada automáticamente

**Paso a igualdades agregando slacks:**

X2 – X3 + U1= 2

4 X1 + 6 X2 - X4 + U2 = 24

10 X1 – 30 X2 – X5 + U3 = 30

Z(MAX) = X1 + 8\*X2 + 0\*X3 + 0\*X4 + 0\*X5 – M\*u1 – M\*u2 – M\*u3

**Tabla inicial:**

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | | 1 | 8 | 0 | 0 | 0 | -M | -M | -M |  |
| Ck | Xk | Bk | X1 | X2 | X3 | X4 | X5 | U1 | U2 | U3 | Tita |
| -M | U1 | 2 | 0 | 1 | -1 | 0 | 0 | 1 | 0 | 0 | - |
| -M | U2 | 24 | 4 | 6 | 0 | -1 | 0 | 0 | 1 | 0 | 6 |
| -M | U3 | 30 | 10 | -30 | 0 | 0 | -1 | 0 | 0 | 1 | 3 |
| Z = -56M | | | -14M-1 | 23M-8 | M | M | M | 0 | 0 | 0 |  |

No estamos en el óptimo.

Entra: X1 y sale: U3

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | | 1 | 8 | 0 | 0 | 0 | -M | -M | -M |  |
| Ck | Xk | Bk | X1 | X2 | X3 | X4 | X5 | U1 | U2 | U3 | Tita |
| -M | U1 | 2 | 0 | 1 | -1 | 0 | 0 | 1 | 0 | 0 | 2 |
| -M | U2 | 12 | 0 | 18 | 0 | -1 | 2/5 | 0 | 1 | -2/5 | 2/3 |
| 1 | X1 | 3 | 1 | -3 | 0 | 0 | -1/10 | 0 | 0 | 1/10 | - |
| Z = 3 – 14M | | | 0 | -19M-11 | M | M | -2/5M-1/10 | 0 | 0 | 2/5M+1/10 |  |

No estamos en el óptimo.

Entra X2 y sale: U2

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | | 1 | 8 | 0 | 0 | 0 | -M | -M | -M |  |
| Ck | Xk | Bk | X1 | X2 | X3 | X4 | X5 | U1 | U2 | U3 | Tita |
| -M | U1 | 4/3 | 0 | 0 | -1 | 1/18 | -1/45 | 1 | -1/18 | 1/45 | 24 |
| 8 | X2 | 2/3 | 0 | 1 | 0 | -1/18 | 1/45 | 0 | 1/18 | -1/45 | - |
| 1 | X1 | 5 | 1 | 0 | 0 | -3/18 | -3/18 | 0 | 3/18 | 3/18 | - |
| Z = 41/3 – 4/3M | | | 0 | 0 | M | -1/18M -11/18 | M +1/90 | 0 | 1/18M+11/18 | -M/45 -1/90 |  |

No estamos en el óptimo.

Entra: X4 y sale: U1

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | | 1 | 8 | 0 | 0 | 0 | -M | -M | -M |  |
| Ck | Xk | Bk | X1 | X2 | X3 | X4 | X5 | U1 | U2 | U3 | Tita |
| 0 | X4 | 24 | 0 | 0 | -18 | 1 | -2/5 | 18 | -1 | 2/5 | - |
| 8 | X2 | 2 | 0 | 1 | -1 | 0 | 0 | 1 | 0 | 0 | - |
| 1 | X1 | 9 | 1 | 0 | -3 | 0 | -1/10 | -3 | 0 | 7/30 | - |
| Z = 25 | | | 0 | 0 | -11 | 0 | -1/10 | 5+M | 0 | 7/30+M |  |

No estamos en el óptimo, pero NO hay titas válidos (ni para X3 ni X5), no hay próximo vértice. 🡪 **POLIEDRO ABIERTO!**

**El poliedro abierto se puede ver claramente en el gráfico.**