Calendario

Descripción generada automáticamente

Imagen que contiene Calendario

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Armo las relaciones entre la tabla directa y la dual.

|  |  |
| --- | --- |
| X1 = 40/3 | Y5 =0 |
| X2 = 40 | Y6 = 0 |
| X3 = 0 | Y7 = 4/3 |
| X4 = 0 | Y1 = 5/3 |
| X5 = 20/3 | Y2 = 0 |
| X6 = 0 | Y3 = 10/3 |
| X7 = 160/3 | Y4 = 0 |

1. Comprar 21kg de R2:

Una unidad mas de R2 me mejora el funcional en 10/3.

21kg como máximo me puedo ganar: 21\*10/3 = $70.

Me piden $100 por los 21kg, no me conviene.

Vender 41kg de R2:

3 x1 + 2x2 + x3 <= (120-41) = 79

Si mínimo debo vender 40 de X2, esto es incompatible.

Elijo la opción uno.

~~Caso 1: comprar 21kg.~~

~~Reemplazo su valor actual (100) por 121 y veo como afecta a la tabla.~~

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | | ~~-40~~ | ~~121~~ | ~~120~~ | ~~120~~ |  |  |  |
| ~~Ck~~ | ~~Yk~~ | ~~Bk~~ | ~~A1~~ | ~~A2~~ | ~~A3~~ | ~~A4~~ | ~~A5~~ | ~~A6~~ | ~~A7~~ |
| ~~-40~~ | ~~Y1~~ | ~~5/3~~ | ~~1~~ | ~~-4/3~~ | ~~0~~ | ~~1/3~~ | ~~-2/3~~ | ~~1~~ | ~~0~~ |
| ~~120~~ | ~~Y3~~ | ~~10/3~~ | ~~0~~ | ~~1/3~~ | ~~1~~ | ~~2/3~~ | ~~-1/3~~ | ~~0~~ | ~~0~~ |
|  | ~~Y7~~ | ~~4/3~~ | ~~0~~ | ~~-2/3~~ | ~~0~~ | ~~-1/3~~ | ~~-1/3~~ | ~~0~~ | ~~1~~ |
| ~~Z = 1000/3~~ | | | ~~0~~ | ~~-83/3~~ | ~~0~~ | ~~-160/3~~ | ~~-40/3~~ | ~~-40~~ | ~~0~~ |

~~No me afecta en nada comprar 21kg más de R2.~~

~~Caso 2: vender 41kg~~

~~Reemplazo su valor actual (100) por 100-41=59 y veo cómo afecta a la tabla.~~

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | | ~~-40~~ | ~~59~~ | ~~120~~ | ~~120~~ |  |  |  |
| ~~Ck~~ | ~~Yk~~ | ~~Bk~~ | ~~A1~~ | ~~A2~~ | ~~A3~~ | ~~A4~~ | ~~A5~~ | ~~A6~~ | ~~A7~~ |
| ~~-40~~ | ~~Y1~~ | ~~5/3~~ | ~~1~~ | ~~-4/3~~ | ~~0~~ | ~~1/3~~ | ~~-2/3~~ | ~~1~~ | ~~0~~ |
| ~~120~~ | ~~Y3~~ | ~~10/3~~ | ~~0~~ | ~~1/3~~ | ~~1~~ | ~~2/3~~ | ~~-1/3~~ | ~~0~~ | ~~0~~ |
|  | ~~Y7~~ | ~~4/3~~ | ~~0~~ | ~~-2/3~~ | ~~0~~ | ~~-1/3~~ | ~~-1/3~~ | ~~0~~ | ~~1~~ |
| ~~Z = 1000/3~~ | | | ~~0~~ | ~~103/3~~ | ~~0~~ | ~~-160/3~~ | ~~-40/3~~ | ~~-40~~ | ~~0~~ |

~~No es óptima, entra Y2 y sale Y3.~~

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | | ~~-40~~ | ~~59~~ | ~~120~~ | ~~120~~ |  |  |  |
| ~~Ck~~ | ~~Yk~~ | ~~Bk~~ | ~~A1~~ | ~~A2~~ | ~~A3~~ | ~~A4~~ | ~~A5~~ | ~~A6~~ | ~~A7~~ |
| ~~-40~~ | ~~Y1~~ | ~~15~~ | ~~1~~ | ~~0~~ | ~~4~~ | ~~3~~ | ~~-2~~ | ~~1~~ | ~~0~~ |
| ~~59~~ | ~~Y2~~ | ~~10~~ | ~~0~~ | ~~1~~ | ~~3~~ | ~~2~~ | ~~-1~~ | ~~0~~ | ~~0~~ |
|  | ~~Y7~~ | ~~4~~ | ~~0~~ | ~~0~~ | ~~2~~ | ~~1~~ | ~~-1~~ | ~~0~~ | ~~1~~ |
| ~~Z = -10~~ | | | ~~0~~ | ~~0~~ | ~~-103~~ | ~~-2~~ | ~~21~~ | ~~-40~~ | ~~0~~ |

~~Esta tabla NO es óptima, pero no hay ningún tita valido 🡪 Poliedro abierto.~~

~~Claramente entre estás dos opciones, conviene la de comprar 21kg de R2. Esta cantidad no va a cambiar el funcional y se perderá dinero (lo que cuestan esos 21kg), pero por lo menos se tendrá una solución óptima.~~

1. En la tabla optima directa podemos ver que el costo de oportunidad de X3 es 4/3. Esto significa que fabricar una unidad de X3 me va a disminuir el funcional en 4/3.

Si fabricamos una unidad y la vendemos en $3,50, estaríamos ganando:

$3,50 – $4/3 = $2,16

Si compramos una unidad a $3, ganamos:

$3,50 - $3 = $0,5

Claramente conviene fabricar una unidad de X3 y venderla a $3,50.

1. Se tiene una demanda mínima de 40 unidades para X2 y actualmente se están vendiendo 40, por lo tanto, esta demanda se esta cumpliendo (sino no sería optimo).

Estas 40 unidades se están vendiendo a $5 cada una, entonces NO conviene comprar una unidad a $6 ya que estaríamos perdiendo $1.

Interfaz de usuario gráfica, Texto

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Al comprar una unidad, se relaja la primera restricción: X2 >= 39.

Por el VM de A4 el funcional mejora a 5/3 = 1,66.

Entonces el funcional mejora en: $5 – 6$ + $5/3 = $2/3.

Conviene comprarla.