PROBLEMA DE MEZCLAS MULTIPRODUCTO

1: VARIABLES DE DECISIÓN

$Z_{i,j}$: cantidad de zumo de frutas i utilizado en el zumo multifrutas j

$i = 1, 2, 3, 4$

$j = 1, 2, 3$

$Z_{i,j} \geq 0$

2: FUNCIÓN OBJETIVO

$$\begin{aligned} MAX\ Z = {} & 44(Z_{1,1} + Z_{2,1} + Z_{3,1} + Z_{4,1}) + 42(Z_{1,2} + Z_{2,2} + Z_{3,2} + Z_{4,2}) \\ & + 45(Z_{1,3} + Z_{2,3} + Z_{3,3} + Z_{4,3}) - 24(Z_{1,1} + Z_{1,2} + Z_{1,3}) \\ & - 30(Z_{2,1} + Z_{2,2} + Z_{2,3}) - 20(Z_{3,1} + Z_{3,2} + Z_{3,3}) \\ & - 22(Z_{4,1} + Z_{4,2} + Z_{4,3}) \end{aligned}$$

3: RESTRICCIONES

[Disponibilidad]

$Z_{1,1} + Z_{1,2} + Z_{1,3} \leq 1000$

$Z_{2,1} + Z_{2,2} + Z_{2,3} \leq 1000$

$Z_{3,1} + Z_{3,2} + Z_{3,3} \leq 750$

$Z_{4,1} + Z_{4,2} + Z_{4,3} \leq 800$

[Contenido]

$Z_{2,1} \geq 0.25(Z_{1,1} + Z_{2,1} + Z_{3,1} + Z_{4,1})$

$Z_{3,1} \leq 0.20(Z_{1,1} + Z_{2,1} + Z_{3,1} + Z_{4,1})$

$Z_{2,2} \geq 0.5(Z_{1,2} + Z_{2,2} + Z_{3,2} + Z_{4,2})$

$Z_{4,2} \leq 0.25(Z_{1,2} + Z_{2,2} + Z_{3,2} + Z_{4,2})$

$Z_{1,3} \geq 0.25(Z_{1,3} + Z_{2,3} + Z_{3,3} + Z_{4,3})$

$Z_{2,3} \geq 0.25(Z_{1,3} + Z_{2,3} + Z_{3,3} + Z_{4,3})$

$Z_{3,3} = 0$