

$$\sum c_i x_i$$

$$z' = -12x_1 - 3x_2 - 10x_3$$

$$\begin{cases} 3x_1 + x_2 + x_3 + x_4 = 120 \\ 5x_1 + 4x_2 + 3x_3 + x_5 = 300 \\ x_1 + x_2 + x_6 = 50 \\ x_1, x_2, x_3, x_4, x_5, x_6 \geq 0 \end{cases}$$

$$A = \begin{bmatrix} 3 & 2 & 1 & 1 & 0 & 0 \\ 5 & 4 & 3 & 0 & 1 & 0 \\ 1 & 1 & 0 & 0 & 0 & 1 \end{bmatrix}$$

20

300

50

$$B = [A_4 \ A_5 \ A_6] =$$

$$\begin{bmatrix} 1 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & 0 & 1 \end{bmatrix} \leftarrow$$

Soit x . la solution de base réalisable associée à B

$$x = (x_1, x_2, x_3, x_4, x_5, x_6)^T$$

$$x_1 = x_2 = x_3 = 0.$$

$$x_B = \begin{pmatrix} x_4 \\ x_5 \\ x_6 \end{pmatrix} = B^{-1}b = Bb = b$$

$$\begin{pmatrix} x_4 \\ x_5 \\ x_6 \end{pmatrix} = \begin{pmatrix} 120 \\ 300 \\ 50 \end{pmatrix}$$

$$x = (0, 0, 0, 120, 300, 50)$$

Calcul des vites réduites

$$\bar{c}_j = c_j - \underbrace{C_B^T B^{-1} A_j}_0$$

$$\bar{C}_B = (c_4, c_5, c_6) = \underline{(0, 0, 0)}$$

$$\bar{c}_j = c_j$$

$$\bar{c}_1 = c_1 = -12$$

$$\bar{c}_2 = c_2 = -8$$

$$\bar{c}_3 = c_3 = -10$$

$$\bar{c}_4 = c_4 = 0$$

$$\bar{c}_5 = 0$$

$$\bar{c}_6 = 0$$

0	1	<u>-12</u>	-8	-10	0	0	0
$x_4 = 120$	3	2	1	1	0	0	
$x_5 = 300$	5	4	3	0	1	0	
$x_6 = 50$	1	1	0	0	0	1	

$\bar{c}_1 = -12 < 0$; x_1 entre dans la base.

... 120, 300, 50

itération 2 = tableau 2 $\frac{-2}{3} + 1$ $\frac{-6}{3} + 3$

			A_3			
440	0	0	-6	4	0	0
$x_1 = 40$	1	$\frac{2}{3}$	$\frac{1}{3}$	$\frac{1}{3}$	0	0
$x_5 = 100$	0	$\frac{2}{3}$	$\frac{4}{3}$	$-\frac{5}{3}$	1	0
$x_6 = 10$	0	$\frac{1}{3}$	$-\frac{1}{3}$	$-\frac{1}{3}$	0	1

$$x = (40, 0, 0, 0, 100, 10)$$

Equivalent w min $Z' = -12x_1 - 8x_2 - 10x_3$

$$SC : 3x_1 + 2x_2 + x_3 \leq 120$$

$$5x_1 + 4x_2 + 3x_3 \leq 300$$

$$x_1 + x_2 \leq 50$$

$$3x = -8$$

$$x = -\frac{8}{3}$$

$$x_1, x_2, x_3 \geq 0$$