

Ex 1 affectation. (8)

On cherche le max de

(T0)

14143
42214
43514
12313
22523

donc le min de

(T1)

41412
13341
12041
43242
33032

- Phase 1 : un 0 sur chaque ligne puis colonne $\rightarrow$

- Phase 2 : 4 Zéros encadrés

- Phase 3 : marquage (+ petit élt 1) et passage à T3

(T2)

~~3~~	~~0~~	~~2~~	~~2~~	~~1~~
~~0~~	~~2~~	~~2~~	~~3~~	~~0~~
1	2	0	4	1
~~2~~	~~1~~	~~0~~	~~2~~	~~0~~
3	3	~~0~~	3	2

- Phase 2 : 4 Zéros encadrés

- Phase 3 : marquage (+ petit 1)

(T3)

~~3~~	~~0~~	~~4~~	~~2~~	~~1~~
~~0~~	~~2~~	~~3~~	~~3~~	~~0~~
~~1~~	~~1~~	~~0~~	~~3~~	~~0~~
~~2~~	~~1~~	~~1~~	~~2~~	~~0~~
~~2~~	~~2~~	~~0~~	~~2~~	~~0~~

Phase 2 : 4 0

Phase 3 : les 0 colonnes sont marquées

$\rightarrow$ solution (T4)

A	4	0	5	0	2
B	0	1	3	0	0
C	0	0	0	2	0
D	2	0	1	1	0
E	2	1	0	1	1

Ad Ba Cb De Ec

(Rq: 2 autres solutions

A	B	C	D	E
d	a	e	b	c
d	e	a	b	c

Pour ceux qui sont partis de T0 et non T2 :

phase 1 (c1) phase 2 phase 3

(T1)

03032
31103
32403
01202
00301

(T2)

~~0~~	~~3~~	~~0~~	~~3~~	~~2~~
~~3~~	~~1~~	~~1~~	~~0~~	~~3~~
~~3~~	~~2~~	~~4~~	~~0~~	~~3~~
~~0~~	~~1~~	~~2~~	~~0~~	~~2~~
~~0~~	~~0~~	~~3~~	~~0~~	~~1~~

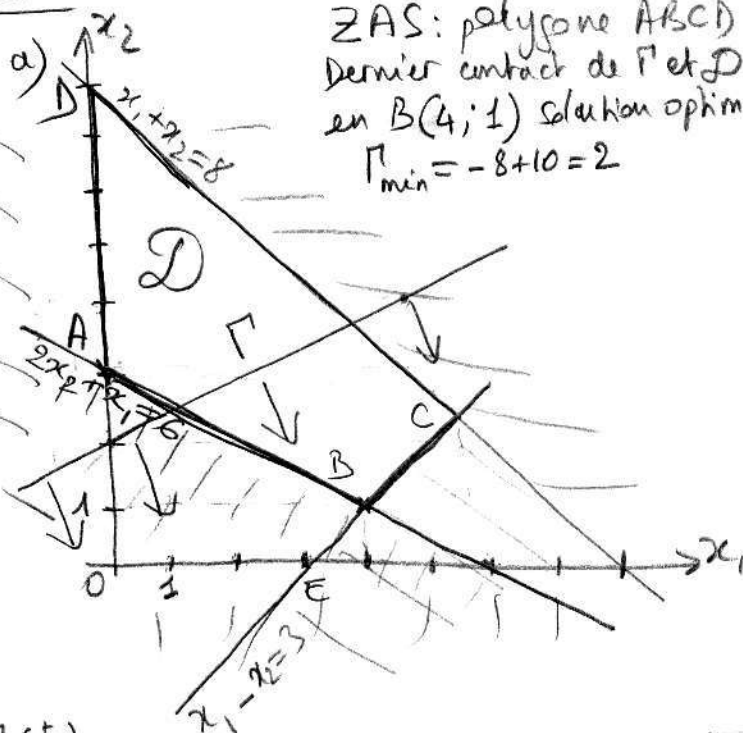
phase 2 phase 3

5 0 $\rightarrow$ Fin

"pire solution"

~~0~~	~~3~~	~~0~~	~~4~~	~~1~~
~~2~~	~~0~~	~~0~~	~~0~~	~~1~~
~~2~~	~~1~~	~~3~~	~~0~~	~~1~~
~~0~~	~~1~~	~~2~~	~~1~~	~~1~~
~~0~~	~~0~~	~~3~~	~~1~~	~~0~~

Ex 2 PML (8)



b) Forme standard: 1 v.a et 3 v.e.

$$\begin{cases} x_1 \geq 0, x_2 \geq 0, e_1 \geq 0, e_2 \geq 0, e_3 \geq 0, a \geq 0 \\ x_1 - x_2 + e_1 = 3 \\ x_1 + x_2 + e_2 = 8 \\ x_1 + 2x_2 - e_3 + a = 6 \end{cases}$$

$$\begin{aligned} \text{Min } \Gamma &= -2x_1 + 5x_2 + Ma \\ &= -2x_1 + 5x_2 + M(6 - x_1 - 2x_2 + e_3) \\ &= (-2 - 6M)x_1 + (5 - 2M)x_2 + Me_3 + 6M \end{aligned}$$

(T0) (p⁰)

	x_1	x_2	(e_1)	(e_2)	e_3	(a)	R	R'
e_1	1	-1	1	0	0	0	3	-3
e_2	1	1	0	1	0	0	8	8
a	1	(2)	0	0	-1	1	6	3 $\rightarrow$ vs 2 ^o crit de D.
Γ	-2-M	5-2M	0	0	M	0	-6M	

$\uparrow$ v.e. (1^o crit. de Dantzig)

(T1) (p¹)

	x_1	(x_2)	(e_1)	(e_2)	e_3	R	R'
$(4+a;2)$ e_1	(3/2)	0	1	1	-1/2	6	4 $\rightarrow$ vs (2/3) x_1
$(e_2-a;2)$ e_2	1/2	0	0	1	1/2	6	12 $(5/3)e_2$
$(a;2)$ x_2	1/2	1	0	0	-1/2	3	6 $(2/3)e_1$
$(1.5-2M)a$ Γ	-9/2	0	0	0	5/2	-15	$(\Gamma+3e_1) \Gamma$

(la v.a. disparaît)

$\geq 0 \rightarrow$ FIN

$\Gamma_{min} = -3$

- Le coût de cette production en période i est: $\sum_{j \geq 1} x_{ij} (p_i + k_j) + \sum_{j \geq 1} x_{i+y,j} (q_i + k_j)$.

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|----------|----------|----------|----------|-------|
| P_1 | P_1+k | P_1+2k | P_1+3k | m_1 |
| $\times$ | P_2 | P_2+k | P_2+2k | m_2 |
| $\times$ | $\times$ | P_3 | P_3+k | m_3 |
| $\times$ | $\times$ | $\times$ | P_4 | m_4 |
| q_1 | q_1+k | q_1+2k | q_1+3k | 1_1 |
| $\times$ | q_2 | q_2+k | q_2+2k | S_2 |
| $\times$ | $\times$ | q_3 | q_3+k | S_3 |
| $\times$ | $\times$ | $\times$ | q_4 | S_4 |

Demante D_1 D_2 D_3 D_4