Annales 2016 (iA)

Exercice 1

Cas où $n = 5$

$X = \{x_1, \cdots, x_{25}\}$ $\quad D = \{\text{Blanc, Noir}\}$

$C = \{ C_1 = x_1 + x_6 + x_{11} + x_{16} + x_{21} = 1$

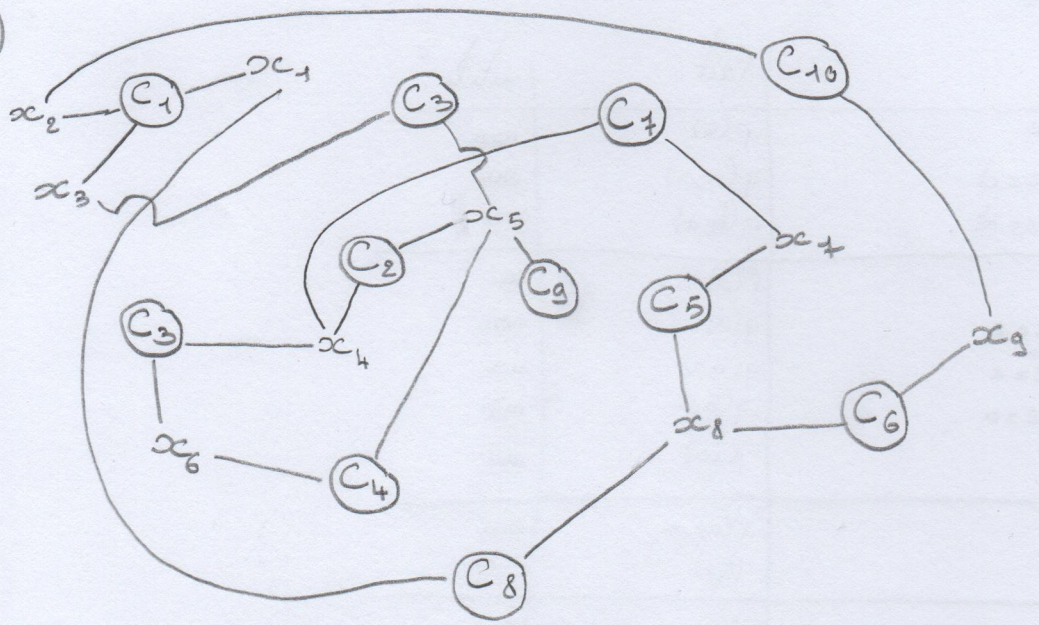
$C_2, \cdots, C_5$

$C_6 = x_{25} + x_{24} + x_{23} + x_{22} + x_{21} = 2$

$C_7, \cdots, C_9 \}$

Exercice 2

1)



2)

	x_1	x_2	x_3	x_4	x_5	x_6	x_7	x_8	x_9	
0	2/0	2/0	2/0	3/0	3/1	2/0	2/0	3/0	2/0	$\rightarrow x_5$
1	2/0	2/0	2/1	3/1	—	2/1	2/0	3/0	2/0	$\rightarrow x_4$
2	2/0	2/0	2/1	—	—	2/2	2/1	3/0	2/0	$\rightarrow x_6$
3	2/0	2/0	2/1	—	—	—	2/1	3/0	2/0	$\rightarrow x_8$
4	2/0	2/0	—	—	—	—	2/1	3/0	2/0	$\rightarrow x_7$
5	2/0	2/0	—	—	—	—	—	3/1	2/0	$\rightarrow x_8$
6	2/1	2/0	—	—	—	—	—	—	2/1	$\rightarrow x_1$
7	—	2/1	—	—	—	—	—	—	2/1	$\rightarrow x_2$
8	—	—	—	—	—	—	—	—	2/2	$\rightarrow x_9$

3) Backtrack

Exercice 3

1) $A_1 = \{p(x,y), q(y,z,a), P(a,w), q(w,x,w)\}$
$A_2 = \{p(a,a), p(a,b), p(b,c), q(c,c,a), q(a,b,a)\}$

w	x	y	z
a	b	c	c

Exercice 4

$R_1 = p(x) \wedge q(x,y) \rightarrow p(y)$
$R_2 = q(x,y) \wedge q(y,z) \rightarrow q(x,a)$
$R_3 = q(x,b) \rightarrow n(x)$
$R_4 = q(x,x) \rightarrow n(x)$
$R_5 = n(x) \wedge q(x,y) \rightarrow p(x)$

$BF = p(b), q(a,e), q(b,c), q(c,d), q(e,d), p(c), q(a,a), q(b,a), p(d), n(a), P(a), P(e)$

Etape	Règle	Nom	Fait	utile ?
1	R_1	$x=b \quad y=c$	$p(c)$	oui
	R_2	$x=a \quad y=e \quad z=d$	$q(a,a)$	oui
	R_2	$x=b \quad y=c \quad z=d$	$q(b,a)$	oui
2	R_1	$x=c \quad y=d$	$P(d)$	oui
	R_2	$x=a \quad y=a \quad z=e$	$q(a,a)$	non
	R_2	$x=b \quad y=a \quad z=e$	$q(b,a)$	non
	R_2	$x=b \quad y=a \quad z=a$	$q(b,a)$	non
	R_4	$x=a$	$n(a)$	oui
3	R_5	$x=a \quad y=e$	$P(a)$	oui
	R_5	$x=a \quad y=a$	$P(a)$	non
4	R_1	$x=a \quad y=e$	$P(e)$	oui
	R_1	$x=a \quad y=a$	$P(a)$	non
5	R_1	$x=e \quad y=d$	$P(d)$	non