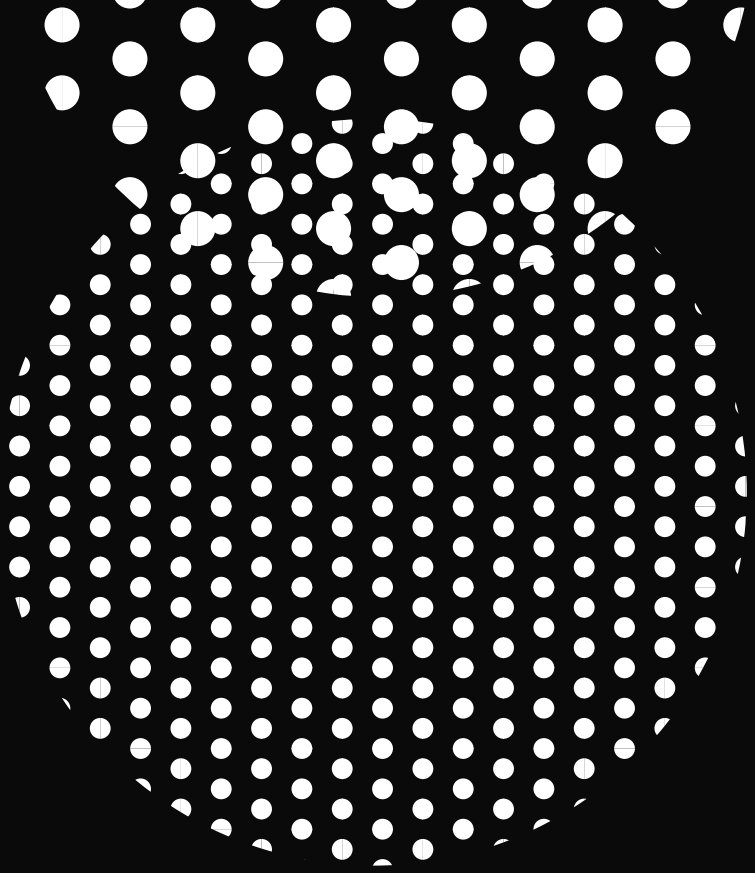
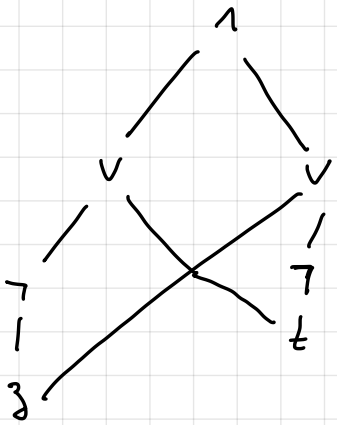
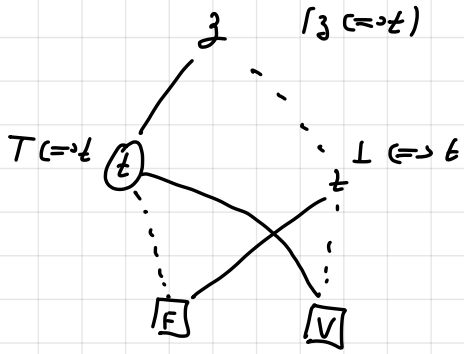
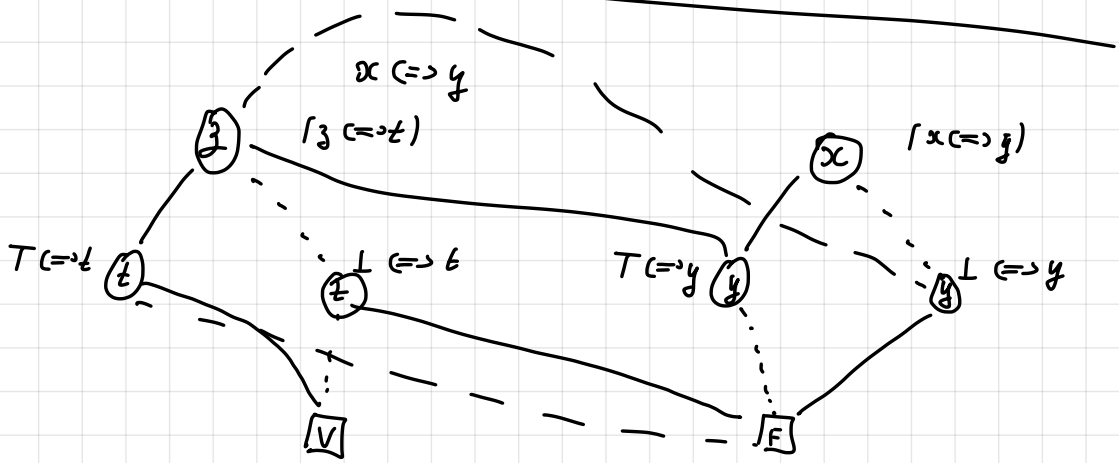


Exercice 4.4

$(\neg z \vee t) \wedge (\neg t \vee z)$







2.

$form(Bool(B)) = B$

$form(IF(x,P,Q)) = (x \wedge form(P)) \vee (\neg x \wedge form(Q))$

3. my $form(obdd(P)) \equiv P$

$P \simeq O$ veut dire que P (formule) a même table de vérité que O (obdd)

donc si $P \simeq O$, $Q \simeq O$ alors $P \equiv Q$ $\Rightarrow$

$P \not\equiv Q \Rightarrow P \not\simeq O_1 \vee Q \not\simeq O_1$

or $P \simeq O_2$ donc $Q \not\simeq O_1$ mais $Q \simeq O_2$

donc $O_1 \neq O_2$

$P \quad Q$

$x < y$

si $P \equiv Q$ donc $P[x \leftarrow \top] \equiv Q[x \leftarrow \top] = Q$
$= P[x \leftarrow \bot] \equiv Q[x \leftarrow \bot] = Q$

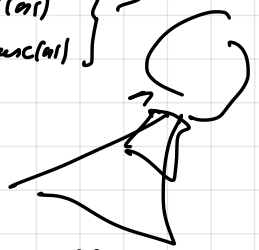
ce qui n'est pas possible car les fils de P sont différents.

4.

(a) $\forall n \in G$,

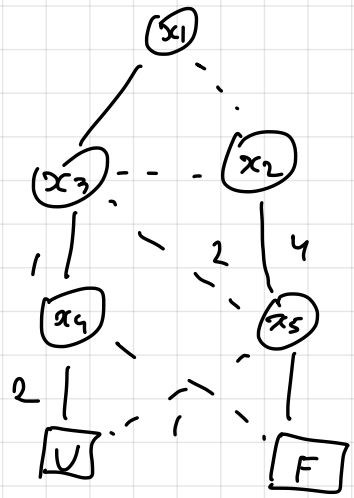
noeud(n) => noeud(vrai(n)) => var(n) > var(vrai(n))
faux(n)) => var(n) > var(faux(n)) } ordre

noeud(n) => vrai(n) ≠ faux(n) } red



n_1, n_2 feuille(n_1) ∧ feuille(n_2) ∧ val(n_1) = val(n_2) => $n_1 = n_2$
noeud(n_1) ∧ noeud(n_2) ∧ vrai(n_1) = vrai(n_2) => $n_1 = n_2$
∧ faux(n_1) = faux(n_2)

(B)



pas visible

d

+ 2 | $x_1\ x_2\ x_3\ x_4\ (x_5)$
+ 2 | $x_2\ x_3\ (x_4)\ x_5$
+ 4 | $x_2\ (x_3\ x_4)\ x_5$

Exercice 4.5

1.

(a) $\forall x_1\ (E(x,x) \Rightarrow [\exists y,\ E(x,y) \wedge x \neq y])$

(B) $\forall x\ \exists y,\ E(x,y) \vee E(y,x)$

(C) $\exists x\ y\ z,\ x \neq y \wedge y \neq z \wedge x \neq z \wedge [E(x,y) \vee E(y,x)] \wedge ([E(x,z) \vee E(z,x)] \wedge (E(y,z) \vee E(z,y)))$

3.