

IGL502/752: devoir 3

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3 novembre 2020

Question 1

- (a) $\exists F \forall X G \exists X (p \vee q)$
- (b) $\forall X \neg \exists ((\exists F p) \cup \neg q)$
- (c) $\forall X \exists (q \wedge \forall F p)$
- (d) $((p \vee (\exists (p \cup q))) \wedge (\exists X \forall G \forall G p))$

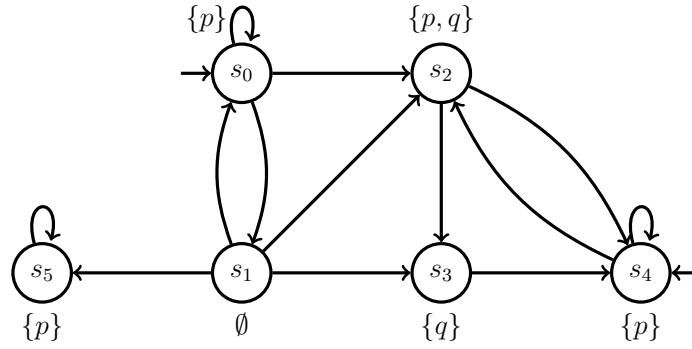
Question 2

- (a)
 - (i) ...
 - (ii) ...
 - (iii) ...
 - (iv) ...
 - (v) ...
- (b) ...

Question 3

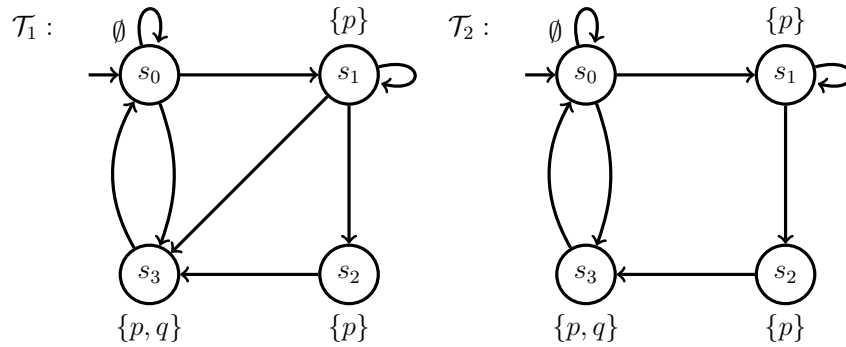
- (a) $\neg \forall (p \cup q) \not\equiv \exists (p \cup \neg q)$
- (b) $\exists X \forall G p \not\equiv \forall X \exists G p$
- (c) $\exists F \forall G \exists F p \not\equiv \forall G \exists F p$

Question 4



- (a) $\forall G(p \vee q)$
- (b) $\exists G(p \vee q)$
- (c) $\exists(p \cup q)$
- (d) $\exists X \forall(p \cup q)$
- (e) $\forall G \exists F \exists(p \cup q)$

Question 5



Question 6

- (a) $\forall G \exists F p \dots$
- (b) (i) $\mathcal{T}_n \models FGp$ et $\mathcal{T}'_n \not\models FGp \dots$
★ ...
 (ii) ...