

11. Exercises for the Course 'Description Logics'

Exercise 42:

Finish the proof of Lemma 5.7 by showing that $v_0 \in C_G^I$.

Exercise 43:

Determine whether or not Player 2 has a winning strategy in the PSPACE game $G = (\varphi, \{p_0, p_2\}, \{p_1, p_3\})$ with

$$\varphi = (\neg p_0 \rightarrow p_1) \wedge ((p_0 \wedge p_1) \rightarrow (p_2 \vee p_3)) \wedge (\neg p_1 \rightarrow (p_3 \rightarrow \neg p_2))$$

Exercise 44:

Determine whether or not Player 2 has a winning strategy in the EXPTIME game $G' = (\varphi, \Gamma_1, \Gamma_2, t_0)$ with

- $\varphi = (p_1 \wedge p_2 \wedge p_3 \wedge \neg q) \vee (\neg p_1 \wedge \neg p_2 \wedge \neg p_3 \wedge q)$,
- $\Gamma_1 = (p_1, p_2, p_3)$,
- $\Gamma_2 = (q)$,
- $t_0(p_1) = t_0(p_2) = t_0(p_3) = t_0(q) = 0$.