

Consider the TBox T with the following axioms:

$$\forall R. \neg B \sqsubseteq B$$

$$\exists R. (\exists R.C) \sqsubseteq \neg A \sqcup \neg B$$

and the interpretation I over domain $\Delta^I = \{a, b, c, d, e, f\}$:

$$A^I = \{a, c, e\}$$

$$B^I = \{c, d, e, f\}$$

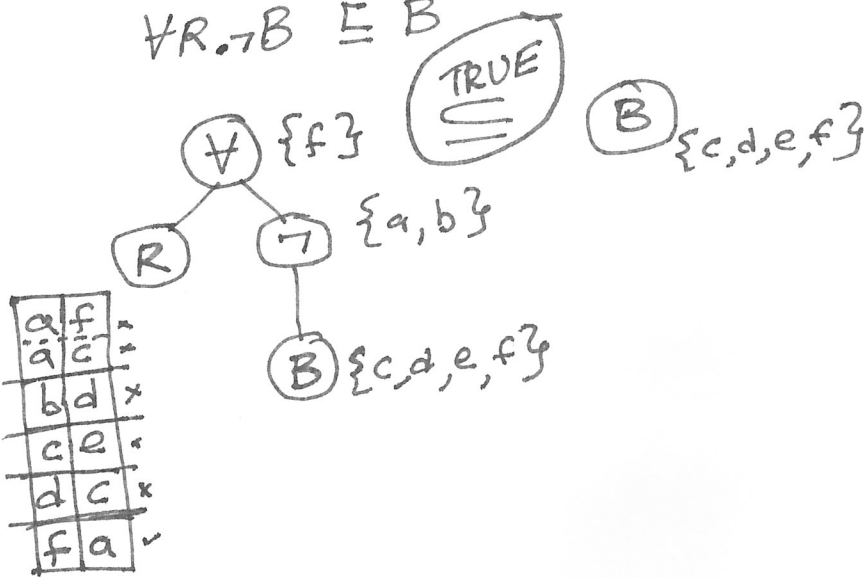
$$C^I = \{e\}$$

$$R^I = \{ \langle a, f \rangle, \langle a, c \rangle, \langle b, d \rangle, \langle d, c \rangle, \langle c, e \rangle, \langle f, a \rangle \}$$

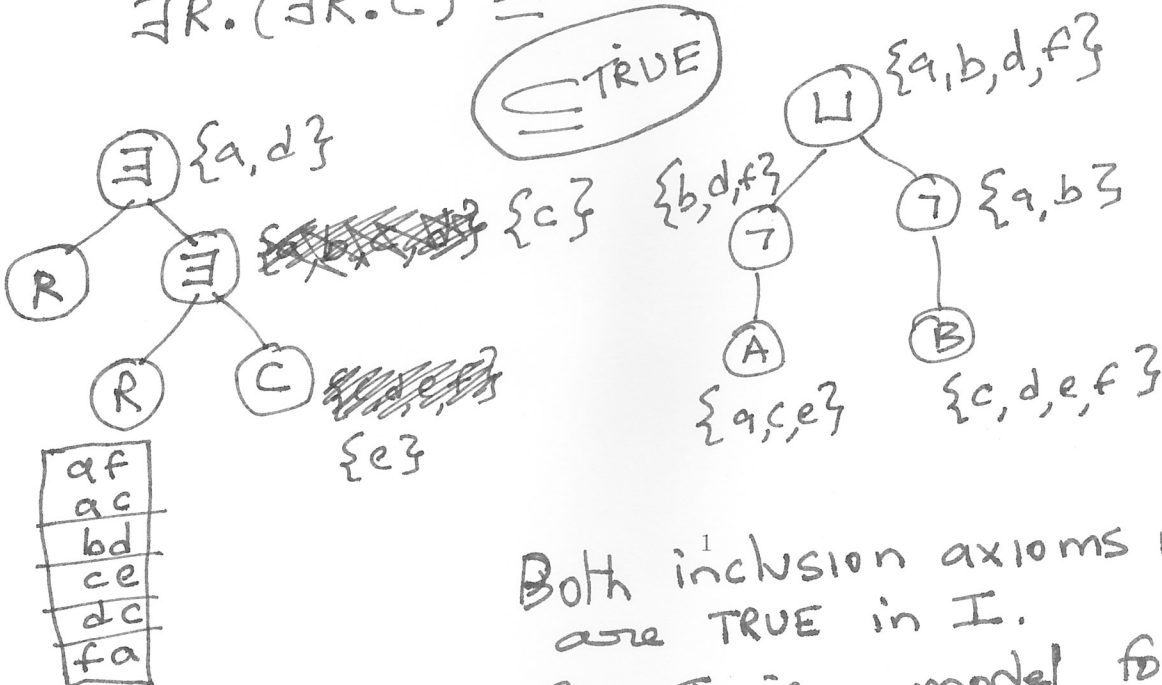
Is I a model for T ?

Solution

$$\forall R. \neg B \sqsubseteq B$$



$$\exists R. (\exists R.C) \sqsubseteq \neg A \sqcup \neg B$$



Both inclusion axioms in T are TRUE in I .
So, I is a model for T .