EXERCISE 5

Human Reasoning and Computational Logic

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Problem 5.1

Consider the six programs representing Byrne's suppression task on slide 32 and 33.

1. What are the least models of the completion of these programs?
2. Which ones are different to the least models of the weak completion of these programs?

Problem 5.2

Show that the following theorem holds under the Weak Completion Semantics:

Theorem 4 The model intersection property holds for $\mathrm{wc}\,\mathcal{P}$, i.e. $\cap\{I \mid I \models \mathrm{wc}\,\mathcal{P}\} \models \mathrm{wc}\,\mathcal{P}$.

Problem 5.3

Show that the following proposition holds under the Weak Completion Semantics:

Proposition 5 If $I \models \mathrm{wc}\,\mathcal{P}$ then $I \models \mathcal{P}$.

Does the other direction, If $I \models \mathcal{P}$ then $I \models \mathrm{wc}\,\mathcal{P}$, hold as well? Motivate your answer.