



Nonmonotonic Reasoning

Winter Semester 2017/18

Exercise Sheet 6 – Autoepistemic logics

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Exercise 6.1 Show that the normal form for AE-formulas is a normal form (i.e., every AE-formula can be equivalently transformed into normal form) and that this normal form preserves the degree of an AE-formula (i.e. $degree(\varphi) = degree(nf(\varphi))$).

Exercise 6.2 Show that the equivalences given in Lemma 4.9 do not hold for arbitrary sets of AE-formulas.

Exercise 6.3 Verify that the expansions obtained for the two AE-theories from Example 4.6 are correct.

Exercise 6.4 Given the AE-theory $T = \{\neg Lp \longrightarrow q, Lq \longrightarrow p, Lq \longrightarrow q\}$.

- (a) Compute the extensions of T .
- (b) Give an intuitive explanation of the expansions of T .