

Homework 3

Due October 24, 2000

1. p. 147: Problem 5.8.a
2. pp. 180-181:
 - a) Problems 6.3.a, c, e, g.
 - b) Problem 6.4.
 - c) Problems 6.7.a, c.
 - d) Problem 6.8.b.
3. pp. 213-215:
 - a) Problems 7.2.a, b, d, i.
 - b) Problem 7.7.
4. Briefly define the following terms:
 - a) An interpretation in prepositional logic (PL)
 - b) Logical consequences
 - c) A sound inference rule
5. Short questions:
 - a) Show that inference rules “modus ponens”, “modus tollens”, and “chaining” can all be replaced by a single rule of resolution.
 - b) Predicates in first order logic (FOL) are special functions. Like other functions, a predicate is a function of terms (i.e., it takes terms as its arguments). However, predicates behave differently than other functions. Give two major differences between predicates and other functions.