

Problem assignment 7

Due: Thursday, November 12, 2009

First-order logic

Problem 1. Translation and Inference

Consider the following paragraph:

Tony, Mike and John belong to the Alpine Club. Every member of the Alpine Club is either a skier or a mountain climber or both. No mountain climber likes rain, and all skiers like snow. Mike dislikes whatever Tony likes and likes whatever Tony dislikes. Tony likes rain and snow.

Part a. Represent the above information in FOL.

Part b. Consider a statement: There exists a member of the Alpine Club who is a mountain climber but not a skier. Use resolution refutation to show whether the knowledge extracted from the paragraph entails the statement. Your solution should give a proof in terms of a sequence of clauses derived by applying the resolution rule to existing sentences and corresponding variable substitutions.