Universiteit van Amsterdam
Institute for Logic, Language and Computation

Reasoning and Formal Modelling for Forensic Science

2010/2011; 2nd Semester

Prof. Dr. Benedikt Löwe

Werkcollege Exercises # 6

Please start thinking about these exercises before the next *werkcollege* on Friday, 18 March, 11am, room A1.10. The exercises will be discussed in class with active student participation: you will get some extra time to think about them, and then present the solutions in front of the class.

Exercise 15.

The Forensics Lab is investigating the murder of Inga Witherspoon. There are two suspects in the case, her husband Peter and the butler James. They have found some tiny sample of DNA that will uniquely identify the murderer. However, due to the small amounts of DNA in the sample, the only technique to identify the DNA will destroy it, and there is only a low probability of getting an answer with current technology.

The scientists have the difficult decision whether to apply current technology or put the sample in the freezer in the hope that future technology will get an answer for sure.

Model this situation as a tree of partially controlled situations with times t_0 (current moment), t_1 (no application of current technology), t_2 (application of current technology, no result), t_3 (application of current technology, result: *Peter was the murderer*), t_4 (application of current technology, result: *James was the murderer*), t_5 (no future technology is developed), t_6 (future technology gets an answer: *Peter was the murderer*), t_7 (future technology gets an answer: *James was the murderer*).

On the basis of what information would you make the decision?

Exercise 16.

Go through the slides of all 11 lectures up to and including 14 March and identify six concepts that you consider an important part of the learning experience of the course. Be prepared to argue for your choice.