Computing and Software 701

Logic and Discrete Mathematics
In Software Engineering

Fall 2002

Presentation Topics

Revised: 30 November 2002

1. Explain what Maple is and how to use it?

2. Explain what Mathematica is and how to use it?

3. Exercise 2.

4. Exercise 6.

5. Exercise 7.

6. Exercise 9.

7. Exercise 14.

8. Exercise 15.

9. Explain what the transitive closure of a binary relation is.

10. Exercise 17.

11. Exercise 19 a.

12. Exercise 19 b.

13. Exercise 20 a, b.

14. Exercise 20 c.

15. Explain what regular expressions are and why they are important.

16. Present a sound and complete Gentzen system for propositional logic.

17. Present a sound and complete natural deduction system for propositional logic.

18. Present a sound and complete semantic tableau system for propositional logic.

19. Exercise 28.

20. Exercise 30: State and prove the compactness theorem and show the proof for part (a).

21. Present one of the theories in Exercise 31 or Exercise 32.

22. Exercise 34.

23. Exercise 35 a, 35 b, or 35 c.

24. Exercise 36.

25. Exercise 37.

26. Exercise 38.

27. Exercise 39.

28. Exercise 41 b or 41 c.

29. Exercise 42.

30. Exercise 43.

31. Exercise 44 a.