1. (10 points) Problem 7.9 from your textbook.
2. (10 points) Problem 7.12 from your textbook (all parts).
3. (10 points) Problem 8.15 from your textbook. To understand this question you must read up on the ‘wumpus world’ from your book.
4. (20 points) Problem 9.8 from your textbook.
5. (20 points) Problem 9.9 from your textbook. Generalized Modus Ponens is simply Modus Ponens endowed with unification.
6. (30 points) We are given 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.

Represent this information by predicate logic sentences in such a way that you can represent the question ‘Who is a member of the Alpine Club who is a mountain climber but not a skier?’ as well. Use resolution refutation to extract the answer to this question.