1. Formulate the following argument as a tautology.

If it has snowed, it will be poor driving. If it is poor driving, I will be late unless I start early. Indeed, it has snowed. Therefore, I must start early to avoid being late.

2. Use the tableau method to prove this tautology.

3. Brown, Jones, and Smith are suspected of a crime. They testify as follows:

   Brown: Jones is guilty and Smith is innocent.
   Jones: If Brown is guilty then so is Smith.
   Smith: I’m innocent, but at least one of the others is guilty.

Let $B$, $J$, and $S$ be the statements “Brown is innocent,” “Jones is innocent,” “Smith is innocent”. Express the testimony of each suspect as a propositional formula. Write a truth table for the three testimonies.

4. Use this truth table to answer the following questions:

   (a) Are the three testimonies consistent?
   (b) The testimony of one of the suspects follows from that of another. Which from which?
   (c) Assuming everybody is innocent, who committed perjury?
   (d) Assuming all testimony is true, who is innocent and who is guilty?
   (e) Assuming that the innocent told the truth and the guilty told lies, who is innocent and who is guilty?