CSC 2510 lab#2

Question#1: *proof the given argument below using the formulas of inference.*

A Λ (B -> C) Λ [(A Λ B) -> (D V C')] Λ B -> D

$$A \bigwedge (B \to C) \bigwedge \left[\left(A \bigwedge B \right) \to \left(D \bigvee C' \right) \right] \bigwedge B \to D$$

1. A is a hypothesis
2. (B --> C) is a hypothesis
3. $[(A \bigwedge B) \to (D \bigvee C')]$ is a hypothesis
4. B is a hypothesis
5. A $\bigwedge B$ based on a conjunction of 1 and 4
6. C based on a Modus Ponens of 4 and 2
7. D V C' based on Modus Ponens of 2 and 3
8. D based on Disjunctive Syllogism and Modus Ponens of 3
9. A $\bigwedge B \to D$ based on Modus Ponens of 3
10. Conclusion: A $\bigwedge (B \to C) \bigwedge [(A \bigwedge B) \to (D \bigvee C')] \bigwedge B \to D$