CISC 301

Resolution – Example Questions

1. Use resolution to establish the following:

- $((A \wedge B) \vee (C \rightarrow D)) \rightarrow ((A \vee (C \rightarrow D)) \wedge (B \vee (C \rightarrow D)))$ is valid.

- $((A \rightarrow B) \wedge (B \rightarrow C)) \rightarrow \neg(\neg C \wedge A)$ is valid.

- $(B \leftrightarrow (B \rightarrow A)) \rightarrow A$ is valid.

- $(\neg A \rightarrow B) \rightarrow ((A \rightarrow B) \rightarrow B)$ is valid.

- $((A \rightarrow B) \rightarrow C)$ is a consequence of $\{(\neg A \rightarrow C), (B \rightarrow C)\}$.

- $(A \rightarrow \neg B)$ is a consequence of $\{(A \rightarrow (B \rightarrow (C \vee D))), \neg(\neg C \rightarrow D)\}$.

- $\neg B$ is a consequence of $\{\neg A, ((A \wedge B) \leftrightarrow (A \vee B))\}$.