

COMP4415 Assignment 5 – 2003
Due: Mon April 28

(EASY) For each of the following formulas, use tableau to either show that the formula is valid, or to construct an assignment with respect to which it is false.

1. $(\neg\neg A) \leftrightarrow A$
2. $A \rightarrow (B \rightarrow A)$
3. $A \rightarrow (B \rightarrow (A \wedge B))$
4. $(A \rightarrow B) \leftrightarrow (\neg B \rightarrow \neg A)$
5. $(A \leftrightarrow B) \rightarrow ((A \vee B) \rightarrow A)$
6. $(\neg(A \wedge B)) \leftrightarrow (\neg A \vee \neg B)$
7. $(A \rightarrow (B \rightarrow C)) \rightarrow ((A \rightarrow B) \rightarrow (A \rightarrow C))$
8. $(A \leftrightarrow (B \wedge C)) \vee (A \wedge \neg B \wedge \neg C)$
9. $((A \rightarrow B) \wedge (B \rightarrow C)) \rightarrow (\neg C \rightarrow (A \wedge B))$
10. $((A \rightarrow B) \wedge ((C \rightarrow D) \wedge (\neg B \vee \neg D))) \rightarrow (\neg A \vee \neg B)$