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Rules of Implication Handout

I. Truth Table for Constructive Dilemma

(P	⊃	Q)	•	(R	⊃	S)	/	P	∨	R	//	Q	∨	S
T	T	T	**T**	T	T	T		T	**T**	T		T	**T**	T
T	T	T	**F**	T	F	F		T	**T**	T		T	**T**	F
T	T	T	**T**	F	T	T		T	**T**	F		T	**T**	T
T	T	T	**T**	F	T	F		T	**T**	F		T	**T**	F
T	F	F	**F**	T	T	T		T	**T**	T		F	**T**	T
T	F	F	**F**	T	F	F		T	**T**	T		F	**F**	F
T	F	F	**F**	F	T	T		T	**T**	F		F	**T**	T
T	F	F	**F**	F	T	F		T	**T**	F		F	**F**	F
F	T	T	**T**	T	T	T		F	**T**	T		T	**T**	T
F	T	T	**F**	T	F	F		F	**T**	T		T	**T**	F
F	T	T	**T**	F	T	T		F	**F**	F		T	**T**	T
F	T	T	**T**	F	T	F		F	**F**	F		T	**T**	F
F	T	F	**T**	T	T	T		F	**T**	T		F	**T**	T
F	T	F	**F**	T	F	F		F	**T**	T		F	**F**	F
F	T	F	**T**	F	T	T		F	**F**	F		F	**T**	T
F	T	F	**T**	F	T	F		F	**F**	F		F	**F**	F

II. For each of the following arguments, determine which, if any, of the 8 Rules of Implication is being followed.

1. A ⊃ (B · C)
   ~(B · C)
   ∴ ~A

2. [(D ∨ E) ⊃ F] · [F ⊃ (G ≡ H)]
   (D ∨ E) ∨ F
   ∴ F ∨ (G ≡ H)

3. I ⊃ ~J
   K ⊃ I
   ∴ K ⊃ ~J

4. L
   ~M · N
   ∴ ~(M · N) · L

5. O
   ∴ O · ~O

6. P
   ∴ P ∨ [Q ≡ (R · ~P)]

7. S ∨ ~T
   ~~T
   ∴ ~S

8. $\sim U \equiv V$
$(\sim U \equiv V) \supset W$
$\therefore W$

9. $X \supset \sim Y$
$\sim Y \supset Z$
$\therefore (X \supset \sim Y) \cdot (\sim Y \supset Z)$

10. $(A \vee \sim B) \vee \sim\sim C$
$\therefore A \vee \sim B$

11. $\sim[D \supset (E \vee F)]$
$[D \supset (E \vee F)] \vee [G \supset (E \cdot \sim F)]$
$\therefore [G \supset (E \cdot \sim F)]$

12. $[(G \vee H) \cdot I] \cdot (\sim I \equiv K)$
$\therefore (G \vee H) \cdot I$