Philosophy 57 — Quiz # 7

(solutions posted 05/13/03)

1 Classifying PL Sentences

Instructions. For each of the following PL statements, classify them as logically true, logically false, or contingent by circling the appropriate description under each statement (**circle only one description per statement**). Use the provided template (to the right of each statement) to report your truth-table calculations (see bottom of page for reference).

1. $(A \supset B) \vee (B \supset A)$

A	B	$(A$	$\supset$	$B)$	$\vee$	$(B$	$\supset$	$A)$
T	T	T	T	T	T	T	T	T
T	F	T	F	F	T	F	T	T
F	T	F	T	T	T	T	F	F
F	F	F	T	F	T	F	T	F

[Logically True] Logically False Contingent

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2. $[(A \supset B) \bullet \sim A] \supset \sim B$

A	B	$[(A$	$\supset$	$B)$	$\bullet$	$\sim$	$A]$	$\supset$	$\sim$	B
T	T	T	T	T	F	F	T	T	F	T
T	F	T	F	F	F	F	T	T	T	F
F	T	F	T	T	T	T	F	F	F	T
F	F	F	T	F	T	T	F	T	T	F

Logically True Logically False [Contingent]

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3. $(A \supset \sim A) \equiv \sim\sim A$

A	$(A$	$\supset$	$\sim$	$A)$	$\equiv$	$\sim$	$\sim$	A
T	T	F	F	T	F	T	F	T
F	F	T	T	F	F	F	T	F

Logically True [Logically False] Contingent

2 Comparing PL Sentences

Instructions. For each of the following pairs of PL sentences, indicate whether they are (logically) equivalent, contradictory, consistent, or inconsistent by circling (**all**) the correct description(s) — **there may be more than one correct description**. Use the provided template (to the right of each pair of statements) to report your simultaneous truth-table calculations.

1. "$(A \supset \sim A)$" *vs* "$\sim A \supset (A \bullet \sim A)$"

A	$(A$	$\supset$	$\sim$	$A)$	$\sim$	A	$\supset$	$(A$	$\bullet$	$\sim$	$A)$
T	T	F	F	T	F	T	T	T	F	F	T
F	F	T	T	F	T	F	F	F	F	T	F

Equivalent [Contradictory] Consistent [Inconsistent]

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2. "$A \supset (B \supset C)$" *vs* "$(B \bullet A) \supset C$"

A	B	C	A	$\supset$	$(B$	$\supset$	$C)$	$(B$	$\bullet$	$A)$	$\supset$	C
T	T	T	T	T	T	T	T	T	T	T	T	T
T	T	F	T	F	T	F	F	T	T	T	F	F
T	F	T	T	T	F	T	T	F	F	T	T	T
T	F	F	T	T	F	T	F	F	F	T	T	F
F	T	T	F	T	T	T	T	T	F	F	T	T
F	T	F	F	T	T	F	F	T	F	F	T	F
F	F	T	F	T	F	T	T	F	F	F	T	T
F	F	F	F	T	F	T	F	F	F	F	T	F

[Equivalent] Contradictory [Consistent] Inconsistent

Connectives:

p	$\sim p$
T	F
F	T

p	q	$p \bullet q$
T	T	T
T	F	F
F	T	F
F	F	F

p	q	$p \vee q$
T	T	T
T	F	T
F	T	T
F	F	F

p	q	$p \supset q$
T	T	T
T	F	F
F	T	T
F	F	T

p	q	$p \equiv q$
T	T	T
T	F	F
F	T	F
F	F	T