(2.5)

I) $P \wedge (P \to Q) \to Q$

	$P \wedge (P \to Q) \to Q$
	$t_4\ T_2\ ?\ t_5\ F_3\ \ F\ \ F_1$

II) $\neg Q \wedge (P \to Q) \to \neg P$

$t_4\ F_5\ \ t_3\ \ ?\ t_6\ F_7\ \ F\ \ F_1\ t_2$

III) $P \vee \neg P$

$F_1\ \ F\ F_2\ ?$

IV) $\neg(P \wedge \neg P)$

$F\ \ t_2\ t_1\ t_3\ ?$

V) $(\neg P \to P) \to P$

$F_4\ ?\ \ t_2\ F_3\ \ \ F\ F_1$

VI) $(P \to Q) \wedge (\neg P \to Q) \to Q$

$F_7\ t_3\ F_6\ \ t_2\ \ F_8\ ?\ t_4\ F_5\ \ \ F\ \ F_1$

VII) $\neg(P \wedge Q) \leftrightarrow (\neg P \vee \neg Q)$

	$\neg(P \wedge Q) \leftrightarrow (\neg P \vee \neg Q)$
1	$\underline{t_1}\ ?\ F_3\ t_8\ \ \ F\ \ \ F_4\ t_6\ \underline{F_2}\ F_5\ t_7$
2	$\underline{F_1}\ t_5\ t_3\ \ t_4\ \ \ F\ \ \ F_7\ t_6\ \underline{t_2}\ t_8\ \ ?$

VIII)

	$\neg$	$(P$	$\vee$	$Q)$	$\leftrightarrow$	$(\neg$	P	$\wedge$	$\neg$	$Q)$
1	$\underline{t_1}$	F_4	F_3	F_5	F	t_7	F_6	$\underline{F_2}$	F_8	?
2	$\underline{F_1}$	?	t_3	F_8	F	t_4	F_6	$\underline{t_2}$	t_5	F_7

IX)

P	$\wedge$	$\neg$	P	$\rightarrow$	Q
t_3	t_2	t_4	?	t	F_1

2.6

I)

P	P	$\wedge$	P
F	F_1	F	F_2
t	t_1	t	t_2

→ contingency

II

not necessary to evaluate	P	Q	R	$((P$	$\rightarrow$	$Q)$	$\rightarrow$	$R)$	$\leftrightarrow$	$(P$	$\rightarrow$	$(Q$	$\rightarrow$	$R))$
1.1	t	t	F	t_9	t_4	t_{10}	$\underline{F_1}$	F_3	t	F_7	$\underline{F_2}$	t_8	F_6	F_5
→ 1.2														
2.1						F_8	?							
							$\underline{t_1}$	F_7	F	t_3	$\underline{F_2}$	t_6	F_4	F_5
2.21				t_9	t_4	?	$\underline{F_1}$	F_3	F	$\underline{t_6}$	$\underline{t_2}$	F_8	$\underline{t_7}$	F_5
2.22	F	F	F	F_9	t_4	F_{10}	$\underline{F_1}$	F_3	F	$\underline{F_6}$	$\underline{t_2}$	F_8	$\underline{t_7}$	F_5

→ contingency

III) (I won't do a Partial Becaus i'll need to do a lot of assumptions)

P	Q	R	$(P \leftrightarrow (Q \leftrightarrow R)) \leftrightarrow ((P \leftrightarrow Q) \leftrightarrow R)$				
t	t	t	t	t	t	t	t
t	t	F	F	F	t	t	F
t	F	t	F	F	t	F	F
t	F	F	T	t	t	F	t
F	t	t	F	t	t	F	F
F	t	F	t	F	t	F	t
F	F	t	t	F	t	t	t
F	F	F	F	t	t	t	F

→ tautology

IV

	P Q	$\neg(P \to Q) \leftrightarrow (P \wedge \neg Q)$								
1.1	t F	$\underline{t_1}$	t_5	F_3	F_4	t	t_6	$\underline{t_2}$	t_7	F_8
1.2										
2.1		$\underline{t_1}$	t_5	F_3	F_4	F	t_6	$\underline{F_2}$	F_7	?
2.2		$\underline{F_1}$	?	t_3	F_2	F	t_4	$\underline{t_2}$	t_5	F_6

→ tautology

2.7

III) $|\phi \vee \psi|_A = F$ iff $|\phi|_A = F$ and $|\psi|_A = F$

IV) $|\phi \to \psi|_A = F$ iff $|\phi|_A = t$ and $|\psi|_A = F$

V) $|\phi \leftrightarrow \psi|_A = F$ iff $|\phi|_A \neq |\psi|_A$

2.8 According to definition 2.9 $I \models \phi$ iff there is no $\mathcal{L}_1$-Structure in which all sentences ~~are true~~ in I are true and ϕ is false.

According to definition 2.11 a set of sentences is consistent iff there is an $\mathcal{L}_1$-Structure under which all sentences in the structure are true.

~~If~~ So, if a set is inconsistent there is no $\mathcal{L}_1$-Structure under which all sentences in that set are true.

If the set containing all sentences in I and $\neg\phi$ is inconsistent then there is no counterexample as in definition 2.10. therefore, the argument must be valid.