

Propositional Logic

Solution 1

(a) $p \wedge q \Rightarrow p$

(b)

p	q	$\mathbf{p} \Rightarrow \mathbf{q}$
t	t	t
t	f	f
f	t	t
f	f	t

(c) $\neg (p \wedge q) \Leftrightarrow \neg p \vee \neg q$

Solution 2

(a) $(p \vee q) \wedge r \Leftrightarrow p \wedge r \vee q \wedge r$

(b)

p	q	$\mathbf{p} \Leftrightarrow \mathbf{q}$
t	t	t
t	f	f
f	t	f
f	f	t

(c) $p \Rightarrow (q \Rightarrow r)$