

# Propositional Logic

## Solution 1

(a)

$$p \wedge q \Rightarrow p$$

(b)

$p$	$q$	$p \Rightarrow q$
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)

$p$	$q$	$p \Leftrightarrow q$
t	t	t
t	f	f
f	t	f
f	f	t

(c)

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