

Question #7 - Exercise 14.5, sections b-d

B.

$$\neg j \rightarrow (l \vee \neg r) \quad 2. (r \wedge \neg l) \rightarrow j$$

j	l	r	$(l \vee \neg r)$	$r \wedge \neg l$	$\neg j \rightarrow (l \vee \neg r)$	$(r \wedge \neg l) \rightarrow j$
T	T	T	T	F	T	T
T	T	F	T	F	T	T
T	F	T	F	T	T	T
T	F	F	T	F	T	T
F	T	T	T	F	T	T
F	T	F	T	F	T	T
F	F	T	F	T	F	F
F	F	F	T	F	T	T

logically equivalent given truth table

C.  $j \rightarrow \neg l$

$$(\neg \wedge p) \neg j \rightarrow l$$

$\neg \leftrightarrow T$

j	l	$j \rightarrow \neg l$	$\neg j \rightarrow l$
T	T	F	T
T	F	T	T
F	T	T	T
F	F	T	F

not logically equivalent given truth table

D.  $(r \vee \neg l) \rightarrow j$

$$j \rightarrow (r \wedge \neg l)$$

j	l	r	$r \vee \neg l$	$r \wedge \neg l$	$(r \vee \neg l) \rightarrow j$
T	T	T	T	F	T
T	T	F	F	F	T
T	F	T	T	T	T
T	F	F	T	F	T
F	T	T	T	F	F
F	T	F	F	F	T
F	F	T	T	T	T
F	F	F	T	F	F

not logically equivalent given truth table