

Homework 1

Chandler Swift

January 23, 2019

- 18 a True
b False
c True, as monkeys are permitted on commercial flights with appropriate documentation as emotional support animals. <https://knpr.org/knpr/2016-08/emotional-support-monkey-allowed-airplane>
d False
- 24 d If Willy cheats, then he gets caught.
e If you can access the website, then you have paid the subscription fee.
f If you got elected, then you knew the right people.
g If Carol is on a boat, then Carol is seasick.

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a	p	$\neg p$	$p \rightarrow \neg p$		
	T	F	F		
	F	T	T		
b	p	$\neg p$	$p \leftrightarrow \neg p$		
	T	F	F		
	F	T	F		
c	p	q	$p \vee q$	$p \oplus (p \vee q)$	
	T	T	T	F	
	T	F	T	F	
	F	T	T	T	
	F	F	F	F	
d	p	q	$p \wedge q$	$p \vee q$	$(p \wedge q) \rightarrow (p \vee q)$
	T	T	T	T	T
	T	F	F	T	T
	F	T	F	T	T
	F	F	F	F	T
e	p	q	$q \rightarrow \neg p$	$p \leftrightarrow q$	$(q \rightarrow \neg p) \leftrightarrow (p \rightarrow q)$
	T	T	F	T	F
	T	F	T	F	F
	F	T	T	F	F
	F	F	T	T	T

	p	q	$p \leftrightarrow q$	$p \leftrightarrow \neg q$	$(p \leftrightarrow q) \oplus (p \leftrightarrow \neg q)$
	T	T	T	F	T
f	T	F	F	T	T
	F	T	F	T	T
	F	F	T	F	T

- 48 a $11000 \wedge (01011 \vee 11011) = 11000$
 b $(01111 \wedge 10101) \vee 01000 = 01101$
 c $(01010 \oplus 11011) \oplus 01000 = 11001$
 d $(11011 \vee 01010) \wedge (10001 \vee 11011) = 11011$