

Solutions for homework on truth tables

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Homework

#H1. Draw a truth table for each of the following sentences:

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

p	q	$\neg p$	$\neg q$	$\neg p \wedge \neg q$
T	T	F	F	F
T	F	F	T	F
F	T	T	F	F
F	F	T	T	T

(b) $\neg q \Leftrightarrow (p \vee q)$

p	q	$p \vee q$	$\neg q$	$\neg q \Leftrightarrow (p \vee q)$
T	T	T	F	F
T	F	T	T	T
F	T	T	F	F
F	F	F	T	F

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

p	q	$\neg q$	$\neg q \Rightarrow p$	$p \Rightarrow (\neg q \Rightarrow p)$
T	T	F	T	T
T	F	T	T	T
F	T	F	T	T
F	F	T	F	T

(d) $p \underline{\vee} (\neg p \Leftrightarrow q)$

p	q	$\neg p$	$\neg p \Leftrightarrow q$	$p \underline{\vee} (\neg p \Leftrightarrow q)$
T	T	F	F	T
T	F	F	T	F
F	T	T	T	T
F	F	T	F	F

(e) $\neg q \vee (q \Rightarrow \neg p)$

p	q	$\neg q$	$\neg p$	$q \Rightarrow \neg p$	$\neg q \vee (q \Rightarrow \neg p)$
T	T	F	F	F	F
T	F	T	F	T	T
F	T	F	T	T	T
F	F	T	T	T	T