The Power of MATH 104

Ch.12.2: Truth Tables Worksheet

Fill out the following truth tables and determine which statements are tautologies, contradictions, or neither.

STATEMENT: $(p \wedge q) \vee \sim p$

p	q	$p \wedge q$	$\sim p$	$(p \wedge q) \vee \sim p$
T	T			
T	F			
F	T			
F	F			

STATEMENT: $\sim p \rightarrow (\sim p \vee q)$

p	q	$\sim q$	$\sim p$	$\sim p \vee q$	$\sim q \rightarrow (\sim p \vee q)$

STATEMENT: $(\sim p \rightarrow q) \vee (\sim p \wedge \sim q)$

p	q					

STATEMENT: $[p \wedge (q \vee \sim r)] \rightarrow (\sim p \wedge q)$

Hint: list the nine columns left to right as follows

p, q, r, $\sim r$, $q \vee \sim r$, $p \wedge (q \vee \sim r)$, $\sim p$, $\sim p \wedge q$,

and finally $[p \wedge (q \vee \sim r)] \rightarrow (\sim p \wedge q)$
