

Math 2283 - Introduction to Logic

Quiz #3 - 2008.09.12

Solutions

1. Translate the following symbolic expression into ordinary language:

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

There are many possible answers, here is the most straightforward one:

If p and q then r , if and only if, not p or r or not q .

2. Construct a truth table for the symbolic expression given above.

p	q	r	$p \wedge q$	$(p \wedge q) \rightarrow r$	$\sim p$	$\sim p \vee r$	$\sim q$	$(\sim p \vee r) \vee (\sim q)$	$[LHS] \leftrightarrow [RHS]$
T	T	T	T	T	F	T	F	T	T
T	T	F	T	F	F	F	F	F	T
T	F	T	F	T	F	T	T	T	T
T	F	F	F	T	F	F	T	T	T
F	T	T	F	T	T	T	F	T	T
F	T	F	F	T	T	T	F	T	T
F	F	T	F	T	T	T	T	T	T
F	F	F	F	T	T	T	T	T	T