Answer to Question #85907 – Math – Discrete Mathematics

Question

Prove that the conditional proposition p->q and its contrapositive ~q ->~p are logically equivalent using the truth table.

Solution

P	Q	$P \Rightarrow Q$	$\sim Q \Rightarrow \sim P$
T	T	T	T
T	F	F	F
F	T	T	T
F	F	T	T

For a possible set of values P and Q, the truth value of both P implies Q and Negation Q implies Negation P is the same. It means they are logically equivalent.