

Quiz 1

1. Determine whether the following argument form is valid or not by using the truth table.

People do not like swimming or swimming is hard. People like swimming if and only if swimming is not hard. Therefore, swimming is hard.

Answer:

Let p be "People like swimming" and q be "Swimming is hard."

The above argument can be written in the following form.

$$\sim p \vee q$$

$$p \leftrightarrow \sim q$$

$$\therefore q$$

Truth table:

p	q	$\sim p \vee q$	$p \leftrightarrow \sim q$	q
T	T	T	F	
T	F	F	T	
F	T	T	T	T
F	F	T	F	

←-- critical row: This has true premises & true conclusion.

Since there is only one critical row (i.e. row 3) and it has true premises with true conclusion, then this argument is **valid**. ■