

Construct the truth table to show that *Modus Ponens* is a valid argument.

$$((p \rightarrow q) \wedge p) \rightarrow q$$

p	q	$p \rightarrow q$	p	$((p \rightarrow q) \wedge p)$	q	$((p \rightarrow q) \wedge p) \rightarrow q$
T	T	T	T	T	T	T
T	F	F	T	F	F	T
F	T	T	F	F	T	T
F	F	T	F	F	F	T

Construct the truth table to show that Hypothetical Syllogism is a valid argument.

$$((p \rightarrow q) \wedge (q \rightarrow r)) \rightarrow (p \rightarrow r)$$

p	q	r	$p \rightarrow q$	$q \rightarrow r$	$(p \rightarrow q) \wedge (q \rightarrow r)$	$p \rightarrow r$	$((p \rightarrow q) \wedge (q \rightarrow r)) \rightarrow (p \rightarrow r)$
T	T	T	T	T	T	T	T
T	T	F	T	F	F	F	T
T	F	T	F	T	F	T	T
T	F	F	F	T	F	F	T
F	T	T	T	T	T	T	T
F	T	F	T	F	F	T	T
F	F	T	T	T	T	T	T
F	F	F	T	T	T	T	T