TABLE 1 Rules of Inference.		
Rule of Inference	Tautology	Name
$\frac{p}{p \to q}$ $\therefore \frac{q}{q}$	$(p \land (p \to q)) \to q$	Modus ponens
$ \begin{array}{c} \neg q \\ p \to q \\ \therefore \ \overline{\neg p} \end{array} $	$(\neg q \land (p \to q)) \to \neg p$	Modus tollens
$p \to q$ $\frac{q \to r}{r}$ $\therefore \frac{p \to r}{p \to r}$	$((p \to q) \land (q \to r)) \to (p \to r)$	Hypothetical syllogism
$p \lor q$ $\neg p$ $\therefore \overline{q}$	$((p \lor q) \land \neg p) \to q$	Disjunctive syllogism
$\therefore \frac{p}{p \lor q}$	$p \to (p \lor q)$	Addition
$\frac{p \wedge q}{p}$	$(p \land q) \rightarrow p$	Simplification
$\frac{p}{\frac{q}{\frac{q}{p \wedge q}}}$	$((p) \land (q)) \rightarrow (p \land q)$	Conjunction
$p \lor q$ $\neg p \lor r$ $\therefore q \lor r$	$((p \lor q) \land (\neg p \lor r)) \to (q \lor r)$	Resolution