Rules of Inference:

p ——— $\therefore\ p \lor q$	$p \rightarrow (p \lor q)$	**Addition**
$p \land q$ ——— $\therefore\ p$	$(p \land q) \rightarrow p$	**Simplification**
p q ——— $\therefore\ p \land q$	$((p) \land (q)) \rightarrow (p \land q)$	**Conjunction**
p $p \rightarrow q$ ——— $\therefore\ q$	$[p \land (p \rightarrow q)] \rightarrow q$	**Modus Ponens**
$\neg q$ $p \rightarrow q$ ——— $\therefore\ \neg p$	$[\neg q \land (p \rightarrow q)] \rightarrow \neg p$	**Modus Tollens**
$p \rightarrow q$ $q \rightarrow r$ ——— $\therefore\ p \rightarrow r$	$[(p \rightarrow q) \land (q \rightarrow r)] \rightarrow (p \rightarrow r)$	**Hypothetical Syllogism**
$p \lor q$ $\neg p$ ——— $\therefore\ q$	$[(p \lor q) \land \neg p] \rightarrow q$	**Disjunctive Syllogism**
$p \lor q$ $\neg p \lor r$ ——— $\therefore\ q \lor r$	$[(p \lor q) \land (\neg p \lor r)] \rightarrow (q \lor r)$	**Resolution**

$\forall x\ P(x)$ ——— $\therefore\ P(c)$ if $c \in U$	**Universal Instantiation**
$P(c)$ for an arbitrary $c \in U$ ——— $\therefore\ \forall x\ P(x)$	**Universal Generalization**
$\exists c\ P(x)$ ——— $\therefore\ P(c)$ for some element $c \in U$	**Existential Instantiation**
$P(c)$ for some element $c \in U$ ——— $\therefore\ \exists x\ P(x)$	**Existential Generalization**