CMSC 250 Some valid Rules of Inference

Modus Ponens	Modus Tollens	Conjunction	Transitivity
$p \to q$ p $\therefore q$	$p \to q$ $\sim q$ $\therefore \sim p$	p q $\therefore p \wedge q$	$p \to q$ $q \to r$ $\therefore p \to r$

Elimination		Generalization	
$p \vee q$ $\sim q$ $\therefore p$	$p \vee q$ $\sim p$ $\therefore q$	p $\therefore p \vee q$	q $\therefore p \vee q$

Specialization		Contradiction rule	Proof by division into cases
$p \wedge q$ $\therefore p$	$p \wedge q$ $\therefore q$	$\sim p \to \boldsymbol{c}$ $\therefore p$	$p \vee q$ $p \to r$ $q \to r$ $\therefore r$