Valid Argument Forms

Modus ponens	$p \to q$	if n is divisible by 10, then n is divisible by 5
	p	n is divisible by 10
	$\therefore q$	therefore n is divisible by 5
Modus tollels	$p \to q$	if n is divisible by 10, then n is divisible by 5
	$\sim q$	n is NOT divisible by 5
	$\therefore \sim p$	therefore n is NOT divisible by 10
Disjunctive addition I	p	n is divisible by 10
	$\therefore p \vee q$	therefore n is divisible by 10 or by 7 (by ...)
Disjunctive addition II	q	n is divisible by 7
	$\therefore p \vee q$	therefore n is divisible by 10 (by ...) or by 7
Conjunctive simplification I	$p \wedge q$	n is divisible by 2 and by 3
	$\therefore p$	therefore n is divisible by 2
Conjunctive simplification II	$p \wedge q$	n is divisible by 2 and by 3
	$\therefore q$	therefore n is divisible by 3
Conjunctive addition	p	n is divisible by 9
	q	n is divisible by 12
	$\therefore p \wedge q$	therefore n is divisible by 9 and by 12
Disjunctive syllogism I	$p \vee q$	n is divisible by 3 or by 7
	$\sim q$	n is NOT divisible by 7
	$\therefore p$	therefore n is divisible by 3
Disjunctive syllogism II	$p \vee q$	n is divisible by 3 or by 7
	$\sim p$	n is NOT divisible by 3
	$\therefore q$	therefore n is divisible by 7
Hypothetical syllogism	$p \to q$	if n is divisible by 12, then n is divisible by 6
	$q \to r$	if n is divisible by 6, then n is divisible by 3
	$\therefore p \to r$	therefore if n is divisible by 12, then n is divisible by 3
Dilemma	$p \vee q$	n is divisible by 8 or by 12
	$p \to r$	if n is divisible by 8, then n is divisible by 4
	$q \to r$	if n is divisible by 12, then n is divisible by 4
	$\therefore r$	therefore n is divisible by 4
Rule of contradiction	$\sim p \to c$	if n is NOT divisible by 10, we obtain a contradiction
	$\therefore p$	therefore n is divisible by 10