SL Rules

Modus Ponens ($\to E$)

$P \to Q$
P
Q

Conjunction Introduction ($\land I$)

P
Q
$(P \land Q)$

Conjunction Elimination ($\land E$)

$(P \land Q)$
P
Q

Disjunction Introduction ($\lor I$)

(P)
$P \lor Q$

Disjunction Elimination ($\lor E$)

$P \lor Q$
$\neg P$
Q

Biconditional Elimination ($\leftrightarrow E$)

$(P \leftrightarrow Q)$
$P \to Q$

Negation Elimination ($\neg E$)

$\neg\neg P$
P

Hypothetical Rules

Reiteration (R)

*[1]

P
P

Conditional Introduction ($\to I$)

$n.$ P
$\vdots$
$m.$ Q
$P \to Q$

Reductio ad Absurdum(RAA)

$n.$ P
$\vdots$
$m.$ Q
m' $\neg Q$
$\neg P$

Argument by Cases (AC)(First Form)

$P \lor Q$
$P \to R$
$Q \to R$
R

For 2nd form , first prove $P \to R$ and $Q \to R$ using ($\to$ I)

[1]Not a hypothetical rule but often used together.