Derivation Rules of SD+

1 Rules of Inference

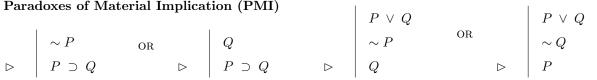
All the Derivation Rules of SD AND

Modus Tollens (MT)

Hypothetical Syllogism (HS)

Disjunctive Syllogism (DS)

Paradoxes of Material Implication (PMI)



Rules of Replacement

Commutation (Com)

P & Q :: Q & P $P \vee Q :: Q \vee P$ Association (Assoc)

P & (Q & R) :: (P & Q) & R $P \vee (Q \vee R) :: (P \vee Q) \vee R$

Implication (Impl)

 $P \supset Q :: \sim P \vee Q$

Double Negation (DN)

 $P :: \sim \sim P$

DeMorgan (DeM)

$$\sim (P \& Q) :: \sim P \lor \sim Q$$

$$\sim (P \lor Q) :: \sim P \& \sim Q$$

Idempotence (Idem)

Transposition (Trans)

$$P \supset Q :: \sim Q \supset \sim P$$

Exportation (Exp)

$$P \supset (Q \supset R) :: (P \& Q) \supset R$$

Distribution (Dist)

Equivalence (Equiv)

$$P \equiv Q :: (P \supset Q) \& (Q \supset P)$$

$$P \equiv Q :: (P \& Q) \lor (\sim P \& \sim Q)$$

Conditional Negation (CN)

$$\sim (P \supset Q) :: P \& \sim Q$$