Propositional logic: Formal language

CS242 Formal Specification and Verification

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Well-formed formulas

Backus Naur form (BNF):

$$\phi ::= p \mid (\neg\phi) \mid (\phi \wedge \phi) \mid (\phi \vee \phi) \mid (\phi \rightarrow \phi)$$

Inversion principle: Any well-formed formula has a unique parse tree.

Examples:

$$(((\neg p) \wedge q) \rightarrow (p \wedge (q \vee (\neg r))))$$
$$(\neg)() \vee pq \rightarrow$$