Daniaico George-Julian - 912.

Individual Homework

Semantic Tableux Method

ex. 2.2

Prove that the following formula is a fautology using termantic tableux method:

$$(p \wedge g \rightarrow r) \rightarrow (p \rightarrow (g \rightarrow r))$$

- A branch of a semantic tableau is called dosed if it contains a formula and its megation, other wise the branch is called open.

- A propositional formula is called a tautology if and only if IV has a clased remantic tableau.

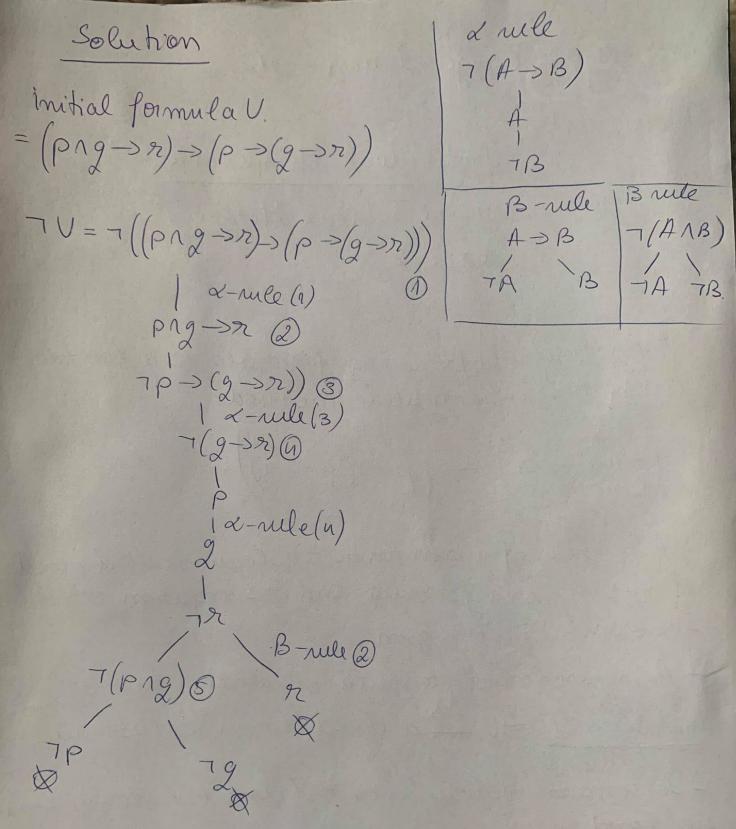
- A semantic tableau is called dosed if all the Grandes are closed.

Decomposition rules

d rule: A 1B T(A >B)=A17B | Brules:

A rule: A 1B A A B

B 7B



All Branches of the remaintic tableau are closed containing pains of appointe leterals: (79,2), (7P,P) (77,7). 7 V has no models, this it is an inconmoteut formula => V is a fau tology.