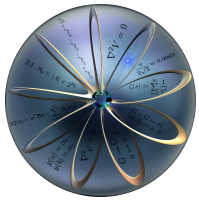

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well-founded induction on formulas

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Let L be a first-order language. The formulas of L are built by a finite application of the rules of construction. This says that the relation $\leq$ defined on formulas by $\varphi \leq \psi$ if and only if φ is a subformula of ψ is a well-founded relation. Therefore, we can formulate a principle of induction for formulas as follows : suppose P is a property defined on formulas, then P is true for every formula of L if and only if

1. P is true for the atomic formulas;

2. for every formula φ, if P is true for every subformula of φ, then P is true for φ.