

CHAPTER I

INTRODUCTION

It is known that explicit definitions satisfy the criterion of eliminability and the criterion of non-creativity. The criterion of non-creativity guarantees that explicit definitions, when adjoined to a theory, do not create any new first-order properties. The purpose of this thesis is to show that explicit definitions do not even create new higher-order properties. We show this by proving that explicit definitions satisfy a new criterion of non-creativity, which guarantees that any model of a theory T can be expanded to a model of T with the definition adjoined to it.

In Chapter II, we study about a first-order language L , models of L , defining terms, formulas and presenting the axioms and rules of inferences and the definition of a formula being true in a model of the language L . At the end of this chapter we state and prove two important theorems of first-order Model's Theory : Gödel's Completeness Theorem and Löwenheim's Theorem.

In Chapter III, we study about explicit definitions, the criterion of eliminability and the criterion of non-creativity (with respect to a theory). Finally, show that explicit definitions satisfy both criteria.

In Chapter IV, we define the criterion of non-creativity with

respect to the (first-order) language of a theory and show that this criterion is more general than the criterion of non-creativity discussed in Chapter III. Finally, we define an even more general criterion of non-creativity (semantic non-creativity) and show that explicit definitions also satisfy this criterion.