

Thesis: The Notion of Interpretation between Axiomatic Theories

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Abstract: In this thesis we are researching the concept of interpretability between axiomatic theories and its basic properties and its uses. We define one-dimensional interpretation and show its behaviour on simple school theories. We also prove some important theorems about interpretations. In next two chapters we show interpretations on more complex theories. We use interpretations for transporting property of essential undecidability to theories in which theory R is interpretable. Then we show that theory of bounded arithmetic $I\Delta_0$ is locally interpretable in Robinson arithmetic Q , which is also an example of cut-interpretation and is related to Edward Nelson's finitist program which we will comment on. Finally we return to school theories and use them to show how to prove that one theory is not interpretable in another.

Keywords: interpretation, axiomatic theory, interpretability, definable sets, Robinson arithmetic