tcp.1 Introduction

This section should be rewritten.

We have the following:

1. A definition of what it means for a function to be representable in $\mathcal{Q}$
2. A definition of what it means for a relation to be representable in $\mathcal{Q}$
3. A theorem asserting that the representable functions of $\mathcal{Q}$ are exactly the computable ones
4. A theorem asserting that the representable relations of $\mathcal{Q}$ are exactly the computable ones

A theory is a set of sentences that is deductively closed, that is, with the property that whenever $T$ proves $\varphi$ then $\varphi$ is in $T$. It is probably best to think of a theory as being a collection of sentences, together with all the things that these sentences imply. From now on, we will use $\mathcal{Q}$ to refer to the theory consisting of the set of sentences derivable from the eight axioms.

Remember that we can code formulas of $\mathcal{Q}$ as numbers; if $\varphi$ is such a formula, let $\#\varphi#$ denote the number coding $\varphi$. Modulo this coding, we can now ask whether various sets of formulas are computable or not.

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Bibliography