

## tcp.1 Introduction

inc:tcp:int:  
sec

We have the following:

1. A definition of what it means for a function to be representable in  $\mathbf{Q}$  (??)
2. a definition of what it means for a relation to be representable in  $\mathbf{Q}$  (??)
3. a theorem asserting that the representable functions of  $\mathbf{Q}$  are exactly the computable ones (??)
4. a theorem asserting that the representable relations of  $\mathbf{Q}$  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, I will use  $\mathbf{Q}$  to refer to the *theory* consisting of the set of sentences derivable from the eight axioms in ???. Remember that we can code formula of  $\mathbf{Q}$  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