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Alan Turing on the Foundations of Mathematics

In 1936 Alan Turing showed that there are mathematical problems which cannot be solved by means of an effective method. Only few years later, in 1938, he introduced the concept of "oracle machine" in order to circumvent Gödel incompleteness theorem. The purpose of this talk is to review these two aspects of Turing's work and discuss their relation to the philosophical problem of the foundations of mathematics. This historical approach may offer a broader understanding of a philosophical question.