Critical Analysis of the Mathematical Formalism of Theoretical Physics. IV. Foundations of Trigonometry TEMUR Z. KALANOV, Retired — Analysis of the foundations of standard trigonometry is proposed. The unity of formal logic and of rational dialectics is methodological basis of the analysis. It is shown that the foundations of trigonometry contradict to the principles of system approach and contain formal-logical errors. The principal logical error is that the definitions of trigonometric functions represent quantitative relationships between the different qualities: between qualitative determinacy of angle and qualitative determinacy of rectilinear segments (legs) in rectangular triangle. These relationships do not satisfy the standard definition of mathematical function because there are no mathematical operations that should be carry out on qualitative determinacy of angle to obtain qualitative determinacy of legs. Therefore, the left-hand and right-hand sides of the standard mathematical definitions have no the identical sense. The logical errors determine the essence of trigonometry: standard trigonometry is a false theory.

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