# ゲンツェンの論理学 ： 基本定理と無矛盾性証明

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# Gentzen's Logic
# - Hauptsatz and Consistency Proof

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We introduce Gentzen's main results in logic, and also state our related works. First we see the sequent calculus, which is a logical system defined by Gentzen. Moreover we sketch his Hauptsatz (fundamental theorem) proved by using that system, which says that one can remove roundabouts from arbitrary given deduction. Second we explain Gentzen's consistency proof for Peano arithmetic, especially the usage of the descending sequence of ordinals, considering the relation with Gödel's incompleteness theorem. Finally we recall Gentzen's another logical system named natural deduction, and mention that our normalization theorem is the representation of Gentzen's Hauptsatz in this system.