Patterns of Proof

证明的方式

The Axiomatic Method

公理化方法

The standard procedure for establishing truth in mathematics was invented by Eu- clid, a mathematician working in Alexandria, Egypt around 300 BC. His idea was to begin with five assumptions about geometry, which seemed undeniable based on direct experience.For example, one of the assumptions was "There is a straight line segment between every pair of points." Propositions like these that are simply accepted true are called axioms.

生活于公元前300年埃及亚历山大港的数学家欧几里得，发明了在数学中证实命题正确性的标准步骤。他的思想发轫于几何学上的五个假设，它们基于直接经验，似乎毋庸置疑。例如，其中一个假设是“两点之间只有一个直线段。”像这样不证自明的命题称为公理。

Starting from these axioms, Euclid established the truth of many additional propositions by providing "proofs".A proof is a sequence of logical deductions from axioms and previously-proved statements that concludes with the proposition in question.

从这些公理开始，通过提供“证明”，欧几里得证实了许多附加命题的正确性。证明是一系列逻辑推论，它们从公理与之前证实的断言开始推定讨论中的命题。