Contents

Frege (*1879*). *Begriffsschrift*, a formula language, modeled upon that of arithmetic, for pure thought 1

Peano (*1889*). The principles of arithmetic, presented by a new method 83

Dedekind (*1890a*). Letter to Keferstein 98

Burali-Forti (*1897* and *1897a*). A question on transfinite numbers *and* On well-ordered classes 104

Cantor (*1899*). Letter to Dedekind 113

Padoa (*1900*). Logical introduction to any deductive theory 118

Russell (*1902*). Letter to Frege 124

Frege (*1902*). Letter to Russell 126

Hilbert (*1904*). On the foundations of logic and arithmetic 129

Zermelo (*1904*). Proof that every set can be well-ordered 139

Richard (*1905*). The principles of mathematics and the problem of sets 142

König (*1905a*). On the foundations of set theory and the continuum problem 145

Russell (*1908a*). Mathematical logic as based on the theory of types 150

Zermelo (*1908*). A new proof of the possibility of a well-ordering 183

Zermelo (*1908a*). Investigations in the foundations of set theory I 199

Whitehead and Russell (*1910*). Incomplete symbols: Descriptions 216

Wiener (*1914*). A simplification of the logic of relations 224

Löwenheim (*1915*). On possibilities in the calculus of relatives 228

Skolem (*1920*). Logico-combinatorial investigations in the satisfiability or provability of mathematical propositions: A simplified proof of a theorem by L. Löwenheim and generalizations of the theorem 252

Post (*1921*). Introduction to a general theory of elementary propositions 264

Fraenkel (*1922b*). The notion "definite" and the independence of the axiom of choice 284

Skolem (*1922*). Some remarks on axiomatized set theory 290

Skolem (*1923*). The foundations of elementary arithmetic established by means of the recursive mode of thought, without the use of apparent variables ranging over infinite domains 302

Brouwer (*1923b*, *1954*, and *1954a*). On the significance of the principle of excluded middle in mathematics, especially in function theory, Addenda and corrigenda, *and* Further addenda and corrigenda 334

von Neumann (*1923*). On the introduction of transfinite numbers 346

Schönfinkel (*1924*). On the building blocks of mathematical logic 355

Hilbert (*1925*). On the infinite 367

von Neumann (*1925*). An axiomatization of set theory 393

Kolmogorov (*1925*). On the principle of excluded middle 414

Finsler (*1926*). Formal proofs and undecidability 438

Brouwer (*1927*). On the domains of definition of functions 446

Hilbert (*1927*). The foundations of mathematics 464

Weyl (*1927*). Comments on Hilbert's second lecture on the foundations of mathematics 480

Bernays (*1927*). Appendix to Hilbert's lecture "The foundations of mathematics" 485

Brouwer (*1927a*). Intuitionistic reflections on formalism 490

Ackermann (*1928*). On Hilbert's construction of the real numbers 493

Skolem (*1928*). On mathematical logic 508

Herbrand (*1930*). Investigations in proof theory: The properties of true propositions 525

Gödel (*1930a*). The completeness of the axioms of the functional calculus of logic 582

Gödel (*1930b*, *1931*, and *1931a*). Some metamathematical results on completeness and consistency, On formally undecidable propositions of *Principia mathematica* and related systems I, *and* On completeness and consistency 592

Herbrand (*1931b*). On the consistency of arithmetic 618

References 629

Index 657