

Zermelo 1908
(Zermelo set theory)

sets
extensionality (sets)
elementary sets, union, power set, infinity, separation, choice

**Fraenkel 1922,
Skolem 1922**
Stated: replacement

von Neumann 1925, 1928
functions, arguments
extensionality (functions)
Stated but not adopted: regularity

function existence axioms, union, power set, infinity, limitation of size

von Neumann 1929
functions, arguments
extensionality (functions)

Proved relatively consistent: regularity
function existence axioms, union, power set, infinity, replacement, von Neumann choice

**Bernays 1931 [letter to Gödel]
1937, 1941**
classes, sets (two sorts)
extensionality (classes)

pairing, class existence axioms, union, power set, infinity, separation, replacement, von Neumann choice, regularity

Gödel 1940 (NBG)
classes, sets (one sort)
extensionality (classes)

pairing, class existence axioms, union, power set, infinity, replacement, global choice, regularity

Legend:

Approach
Primitives
Axioms
Properties

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extensionality (sets)

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← elementary sets
separation, choice

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Stated but not adopted: regularity

→ function existence axioms
limitation of size

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← limitation of size

von Neumann 1929
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→ replacement
von Neumann choice

Proved relatively consistent: regularity
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← function existence axioms

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classes, sets (two sorts)
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→ pairing, class existence axioms
separation, regularity

pairing, class existence axioms, union, power set, infinity, separation, replacement, von Neumann choice
regularity

← separation
von Neumann choice

Gödel 1940 (NBG)
classes, sets (one sort)
extensionality (classes)

→ global choice

pairing, class existence axioms, union, power set, infinity, replacement, global choice, regularity

Legend:
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