The Axioms of Set Theory.

Equality

(1) (Extentionality) Two sets are equal if they have the same elements.

Existence of Special Sets

(2) (Empty Set) $\emptyset$ is a set.

(3) (Infinity) There is a set containing $\omega = \{0, 1, 2, \ldots\}$.

Creation of New Sets

(4) (Pairing) If A and B are sets, then $\{A, B\}$ is a set.

(5) (Union) If I is a set, and A_i is a set for each $i \in I$, then $\bigcup_{i \in I} A_i$ is a set.

(6) (Power Set) If A is a set, then $\mathcal{P}(A)$ is a set.

(7) (Separation) If A is a set and P is a property given by a formula, then $\{x \in A \mid P(x)\}$ is a set.

(8) (Replacement) If A is a set and F is a function given by a formula, then $\{F(x) \mid x \in A\}$ is a set.

(9) (Choice) If $\{A_i \mid i \in I\}$ is set of nonempty disjoint sets, then there is a set C such that $|A_i \cap C| = 1$ for every i.

Sets have Special Properties

(10) (Foundation) There is no infinite sequence of sets $\cdots A_3 \in A_2 \in A_1 \in A_0$.