Set Theory Notes

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1 Axioms of Zermelo-Fraenkel

Axiom 1 (Axiom of Extensionality). If X and Y have the same elements, then X = Y.

Axiom 2 (Axiom of Pairing). For any a and b there exists a set a, b that contains exactly a and b

Axiom 3 (Axiom Schema of Separation). if P is a property (with parameter p), then for any X and p there exists a set $Y = \{u \in : P(u,p)\}$ that contains all those $u \in X$ that have property P.