Why

We want to consider the no-overlapping elements of a pair of sets.

Definition

In other words, we want to consider the set of elements which is one or the other but not in both. The *symmetric difference* of a set with another set is the union of the difference between the latter set and the former set and the difference between the former and the latter. The symmetric differences is also called the *Boolean sum* of A and B[1]

ßNotation

Let A and B denote sets. We denote the symmetric difference by $A + B$.

$$A + B = (A - B) \cup (B - A)$$

Properties

Here are some immmediate properties.[2]

Proposition 1 (Commutative). $A + B = B + A.$

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[1]Future editions will likely remove or modify this term in accordance with the project's policy on using names.

[2]Future editions will have more detailed hypotheses here; for this edition they are obvious.

Proposition 2 (Associative). $(A + B) + C = A + (B + C)$.

Proposition 3 (Identity). $(A + \varnothing) = A$

Proposition 4 (Inverse). $(A + A) = \varnothing$

Set Symmetric Differences

Set Complements   Set Unions

Set Differences   Empty Set   Unordered Pairs

Set Specification

Set Inclusion

Standardized Accounts

Definitions   Accounts

Deductions   Quantified Statements

Logical Statements

Statements

Identities   Sets

Names

Objects   Letters