



Subset System

1 Why

We speak of a set and a set of its subsets satisfying properties. The utility of this abstract concept is proved by its examples, in future sheets.

2 Definition

A **subset system** is a pair of sets: the second set contains subsets of the first.

We call the first set the **base set**. If the base set is finite, we call the subset system a **finite subset system**. A **distinguished subset** is an element of the second set. An **undistinguished subset** is a subset of the first set which is not distinguished.

2.1 Notation

Let A be a set and $\mathcal{A} \subset 2^A$. We denote the subset system of A and \mathcal{A} by (A, \mathcal{A}) , read aloud as “A, script A.”

3 Example

Example 1. *Let A be a nonempty set. Let \mathcal{A} be 2^A . Then (A, \mathcal{A}) is a subset system.*