Some Important Mathematical Terminologies

Definition — a precise and unambiguous description of the meaning of a mathematical term. It characterizes the meaning of a word by giving all the properties and only those properties that must be true.

Theorem — a mathematical statement that is proved using rigorous mathematical reasoning. In a mathematical paper, the term theorem is often reserved for the most important results.

Lemma — a minor result whose sole purpose is to help in proving a theorem. It is a stepping stone on the path to proving a theorem.

Corollary — a result in which the (usually short) proof relies heavily on a given theorem (we often say that "this is a corollary of Theorem A").

Proposition — a proved and often interesting result, but generally less important than a theorem.

Conjecture — a statement that is unproved, but is believed to be true

Claim — an assertion that is then proved. It is often used like an informal lemma.

Axiom/Postulate — a statement that is assumed to be true without proof. These are the basic building blocks from which all theorems are proved.

Identity — a mathematical expression giving the equality of two (often variable) quantities .

Paradox — a statement that can be shown, using a given set of axioms and definitions, to be both true and false. Paradoxes are often used to show the inconsistencies in a flawed theory (Russell's paradox). The term paradox is often used informally to describe a surprising or counterintuitive result that follows from a given set of rules.

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