The Imperative of Definition

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Abstract:

Students' misunderstanding of mathematical definition contributes to their difficulties in writing clear and error-free mathematical proofs. Mathematicians and mathematics teachers often treat the concept of mathematical definition unproblematically, believing (sometimes mistakenly) that students understand the nature of mathematical definitions and the role that those definitions play in mathematics. But students' more extensive experience with other varieties of definition may hinder their understanding of the concept of mathematical definition. Further, students sometimes confuse mathematical definitions with other mathematical statements (e.g., theorems). Drawing a contrast between mathematical definitions and the more familiar kinds of definition, as well as drawing a distinction between definitions and theorems, may help students understand the concept of mathematical definition, resulting in better understanding of mathematical concepts and more effective use of mathematical

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