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Cho, Peter; Moore-Russo, Deborah

How students come to understand the domain and range for the graphs of functions.

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Summary: To understand the mathematical concept of function, students must understand certain subconcepts, such as domain and range. Many researchers have studied students’ understanding of functions, but no study has focused on how students come to understand the domain and range for the graphs of functions. In this study, we identified four common strategies, two transitional conceptions, and two representational challenges evidenced by students. In general, determining the range was more difficult than determining the domain for the students.

Classification: I20 D70

Keywords: functions; domain; range; graph of a function; students’ understanding of functions; difficulties