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Assessing elementary algebra with STACK.

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Summary: This paper concerns computer aided assessment (CAA) of mathematics in which a computer algebra system (CAS) is used to help assess students' responses to elementary algebra questions. Using a methodology of documentary analysis, we examine what is taught in elementary algebra. The STACK CAA system, <http://www.stack.bham.ac.uk/>, which uses the CAS Maxima, is taken as a case study with which to test the implementation of the ideas developed in this paper. The general characteristics needed from a CAS for the application of computer aided assessment, or computer based learning is discussed. In particular the need for consistently implemented noun forms of elementary arithmetic operations, together with their traditional verb forms is identified.

Classification: D65 R45 H25 H35

Keywords: manipulation of expressions; equations; elementary algebra; computer aided assessment; computer algebra; undergraduate students

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