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37 elementare axiomatische Charakterisierungen des reellen Zahlkörpers.

(German) [37 elementary axiomatic characterizations of the real number field]

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The work presented in this paper is the result of the author's attempts in the first semester (German) university level analysis course to arrange the proofs of the fundamentals of real numbers and of continuous, differentiable and integrable functions in such a way that without a lot of additional work one could see their equivalence to the completeness of the ordered field of real numbers. Although there may well be some novelty here and there in the work, none is claimed. (A somewhat similar work, cited by the author but discovered by him only after he had already developed this material for his analysis course, is [H.-G. Steiner, *Math.-Phys. Semesterber* **13** (1966), 180–201; [MR0202599](#)].) For the proofs, the 37 characterizations are divided into six groups, and a series of proof cycles are carried out:  $(1) \Rightarrow (2) \Rightarrow (3) \Rightarrow (4) \Rightarrow (5) \Rightarrow (1)$ , then  $(4) \Rightarrow (7) \Rightarrow (8) \Rightarrow (9) \Rightarrow (10) \Rightarrow (11) \Rightarrow (12) \Rightarrow (2)$ , etc. *G. A. Heuer*

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