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General criteria for determination of class groups of real quadratic orders. (English summary)

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The main theorem in the paper gives necessary and sufficient conditions for the class group C_Δ of the real quadratic order of discriminant Δ to be determined by a given set of primitive, regular ideals. The conditions involve the continued fraction expansions of reduced ideals equivalent to the given ideals. A class number one criterion is presented as a corollary. Several examples are given to show the ease with which the theorem can be used to compute these class groups and to illustrate the corollary. The corollary also serves to correct a class number one criterion previously asserted by the author [Bull. Austral. Math. Soc. **50** (1994), no. 3, 435–443; MR1303899 (95i:11126)].

Reviewed by *Leanne D. Robertson*