Continued fractions and class number two. (English. English summary)

This paper is an extension of the author’s earlier work [in Computational number theory (Debrecen, 1989), 83–94, de Gruyter, Berlin, 1991; MR1151857 (93e:11133)]. Let $D > 1$ be a squarefree positive integer and

$$F_D(x) = -x^2 + (\sigma - 1)x + (D - \sigma + 1)/\sigma^2,$$

where $\sigma = 2$ if $D \equiv 1 \pmod{4}$ or $\sigma = 1$ if $D \equiv 2$ or 3 $\pmod{4}$. In this paper, by the use of ideal theory and continued fractions, the author gives more general criteria for class number 2 of real quadratic fields in terms of $F_D(x)$. 

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