MR1370745 (96j:11139) 11R11 (11G15)
Bayad, Abdelmejid (F-GREN-F)
Loi de réciprocité quadratique dans les corps quadratiques imaginaires. (French. English, French summaries) [Quadratic reciprocity law in imaginary quadratic fields]
Ann. Inst. Fourier (Grenoble) **45** (1995), *no. 5,* 1223–1237.

The author starts from an elliptic curve defined over an imaginary quadratic field K, with complex multiplication by the ring of integers $\mathcal{O}_K$ of K. He constructs an elliptic function f, associated with the lattice $\mathcal{O}_K$, using Weierstrass $\mathfrak{p}$-functions, and establishes product formulas for f. He defines a quadratic symbol $(\frac{\alpha}{\beta})_2$ over K, via a generalization of the Gauss lemma for the Legendre symbol over $\mathbf{Q}$, due to H. Reichardt. He then deduces from the product formulas a quadratic reciprocity law in K, i.e. an expression for $(\frac{\alpha}{\beta})_2^{-1}(\frac{\beta}{\alpha})_2$. The fields $K = \mathbf{Q}(\sqrt{-1})$ and $K = \mathbf{Q}(\sqrt{-3})$ are treated separately. They had been similarly treated by T. Kubota and D. S. Kubert in connection with the biquadratic and the cubic reciprocity laws.

Reviewed by Charles Helou