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A Reciprocity Congruence for an Analogue of the Dedekind Sum and quadratic reciprocity

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Abstract. In the transformation formulas for the logarithms of the classical theta-functions, certain sums arise that are analogous to the Dedekind sums in the transformation of the logarithm of the eta-function. A new reciprocity law is established for one of these analogous sums and then applied to prove the law of quadratic reciprocity.

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