

1116-11-1203 **Tim Huber*** (timothy.huber@utrgv.edu) and **Daniel Schultz**. *Generalized Reciprocal Identities*.

Included in Ramanujan's Notebooks are two reciprocal identities. The first identity connects the Rogers-Ramanujan continued fraction with an eta quotient. The second identity is a level thirteen analogue. The Gölnitz-Gordon continued fraction satisfies a similar equation. These are special cases of a more general class of relations between eta quotients and modular functions defined by product generalizations of the Rogers-Ramanujan continued fraction. Each identity is a relation between generators for the field of functions invariant under a certain congruence subgroup. The degree, form, and symmetry of the identities is determined from behavior at cusps for the congruence subgroup whose field of functions the parameters generate. The reciprocal identities encode information about fundamental units and class numbers for real quadratic fields. (Received September 17, 2015)