Pure Mathematics Seminar

Generalized Reciprocal Identities

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Included in Ramanujan's Notebooks are two reciprocal identities involving continued fractions. 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. In this talk, we frame these identities as 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. Constants appearing in the generalized identities encode information about fundamental units and class numbers for real quadratic fields. 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 invariant functions the parameters generate. This is joint work with Daniel Schultz, Pennsylvania State University.

Date: **Friday, December 4, 2015**
Time: **11:00 am**
Place: **Edinburg:** MAGC 1.302, **Brownsville:** UBLB 3.102

The talk will delivered live at the *Edinburg* campus and will be streamed to the Brownsville campus

Coffee and cookies will be served.

For further information or for special accommodations, please contact
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visit the webpage [http://blue.utb.edu/dg2012/puremathseminar.html].