

Informal Seminar in Number Theory

A computer search for spanning products on congruence subgroups of level 7 – PART III.

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Abstract:

Congruences and other identities are derived for a set of colored partition functions associated with modular forms of level 7. The congruences result from linear transformations between vector spaces of modular forms of weight 1. Basis elements for the vector spaces are derived from a computer search for theta quotients arising from elliptic functions of a specified form.

$$\begin{aligned}P_{0,1^*,2}(7n+1) &\equiv P_{2,0,1^*}(7n+1) \equiv P_{1^*,2,0}(7n+2) \equiv 0 \pmod{2}, \\P_{1^*,2,0}(7n+3) &\equiv P_{0,1^*,2}(7n+4) \equiv P_{2,0,1^*}(7n+6) \equiv 0 \pmod{2}, \\P_{3,3^*,1}(7n+3) &\equiv P_{3^*,1,3}(7n+4) \equiv P_{1,3,3^*}(7n+5) \equiv 0 \pmod{2}, \\P_{0,1^*,2}(7n+5) &\equiv P_{1^*,2,0}(7n+4) \equiv P_{2,0,1^*}(7n+3) \equiv 0 \pmod{3}, \\P_{3^*,1,3}(7n+1) &\equiv P_{3,3^*,1}(7n+5) \equiv P_{1,3,3^*}(7n+6) \equiv 0 \pmod{3}, \\P_{1,3,3^*}(7n+2) &\equiv P_{3,3^*,1}(7n+4) \equiv P_{3^*,1,3}(7n+6) \equiv 0 \pmod{4}.\end{aligned}$$

Date: Thursday, February 28, 2019

Time: 1:30 - 2:30 pm

Place: Edinburg: MAGC 3.502

Join from PC, Mac, Linux, iOS or Android:

<https://utrgv.zoom.us/j/939714199>

Pizza and pop will be served.

For further information or for special accommodations, please contact Dr. Brandt Kronholm via email at [brandt.kronholm@utrgv.edu] or Dr. Timothy Huber via email at [timothy.huber@utrgv.edu].