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Geoffrey Mason* (gem@cats.ucsc.edu). *Rational conformal field theory, Lie algebras, and linear differential equations*. Preliminary report.

To a rational vertex operator algebra V one can attach a representation of the modular group $SL(2, \mathbb{Z})$ on the space E of characters of the irreducible representations of V . We discuss when E arises as the solution space of a suitable linear differential equation. This leads to a universal numerical inequality satisfied by V . It turns out that the inequality is an equality for rational theories associated with the discrete series of the Virasoro algebra, for certain affine Lie algebras. (Received March 03, 2006)