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Timothy J. Huber* (timothy.huber@utrgv.edu). *Modular p -midiation principles.*

I will discuss generalizations of Jacobi's principle of dimidiation and the Borweins' principle of trimidiation. Level p generalizations arise from a special basis construction for $\mathcal{M}_1(\Gamma(p))$, the vector space of weight one modular forms for the principal congruence subgroup of level p . At higher levels, where the number of regular cusps for $X(p)$ is bounded by $2(\text{genus} - 1)$, the dimension of $\mathcal{M}_1(\Gamma(p))$ is unknown, and the construction generates spanning sets of theta quotients for the image of $\mathcal{M}_1(\Gamma_1(p))$ in $\mathcal{M}_1(\Gamma(p))$ under the map $\tau \mapsto \tau/p$. The spanning sets further decompose into a direct sum of p -dissection components given by quotients of theta functions. Dissections of combinatorial generating functions may be given in closed form in terms of these quotients. Congruences for coefficients may be extracted from the dissections. (Received September 19, 2016)