[page 101 missing]

with discriminant d counted in the usual way. For $k=2$ the result modifies into the classical Kronecker class number relation. For $k = 4, 6, 8, 10, 14$ there are no cusp forms and so $\sigma(T_m) = 0$ which gives us 5 new class number relations. For $k = 12$ we have $\sigma(T_m) = \tau(m)$ the socalled Ramanujan function defined by

$$x\left\{\prod_{n=1}^{\infty}(1-x^n)\right\}^{24} = \sum_{1}^{\infty}\tau(m)x^m.$$

and our formula then gives an expression for $\tau(m)$ by means of class numbers.

It should also be mentioned that some higherdimensional spaces can be handled as completely as the hyperbolic plane, that is so that also the ~~noncom~~ case of a non-compact fundamental domain, but with finite volume can be treated, this is true for instance for the general n-dimensional hyperbolic space with metric

$$ds^2 = \frac{dx_1^2 + dx_2^2 + \cdots + dx_n^2}{x_n^2}.$$

In some respects the formulas for odd n are simpler than those for even n.