980-20-294 **Anne V Shepler*** (ashepler@unt.edu), Department of Mathematics, P.O. Box 311430, University of North Texas, Denton, TX 76203-1430. *Reflection Groups, Mysterious Numerology, and the Coinvariant Algebra.*

Reflection groups are known for their mysterious "numerology". These finite groups (generated by reflections about hyperplanes) are often described by a list of integers, the "exponents and coexponents", coming from invariant theory. One may multiply numbers in the list to get the group order or add numbers in the list to get the number of reflections. Strange patterns often appear in the list, and the list appears in several different contexts (e.g., representation theory and topology). We define generalized exponents in terms of the representation theory of the "coinvariant algebra", and then show a connection with differential forms and vector fields associated to the hyperplane arrangement.

(Received August 20, 2002)