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Robert Perlis* (perlis@math.lsu.edu), Louisiana State University, Department of Mathematics, Baton Rouge, LA 70803. *A Synopsis of Old and New Results about Gassmann Triples*. Preliminary report.

Let G be a finite group and let S, S' be G -sets. We say S and S' are *linearly equivalent* when the fixed-point characters $\chi_S = \chi_{S'}$ are equal. Transitive linearly-equivalent G -sets arise from *Gassmann triples*, (G, H, H') , which consist of the group G and two subgroups H, H' having the same fixed-point characters $\chi_{G/H} = \chi_{G/H'}$.

Gassmann triples give rise to number fields with identical Dedekind zeta functions, to pairs of nonisomorphic graphs with identical Ihara zeta functions, and to Riemannian manifolds which are isospectral but not isometric. They can also be used to produce pairs of graphs on surfaces, called *dessins d'enfants*, that need not be isomorphic as *dessins* but which have many invariants in common.

This talk will attempt to collect the main results, old and new, about Gassmann triples and linear equivalence. If time permits, some brief description of applications will be mentioned. (Received August 3, 2007)