1011-05-150 M Klin, M Muzychuk, C Pech and A Woldar* (andrew.woldar@villanova.edu), Department of Mathematical Sciences, Villanova University, Villanova, PA 19085, and P-H Zieschang. Association Schemes on 28 Points as Mergings of a Half-Homogeneous Coherent Configuration.

We enumerate, up to isomorphism, all association schemes on 28 points which arise as homogeneous fusions of the halfhomogeneous coherent configuration AP(2), thus providing a unified explanation of such schemes. Among those we encounter are the ones of pseudocyclic and quasithin type, plus two of pseudotriangular type. Configuration AP(2) has a rich supply of algebraic automorphisms, which allows us to identify many small classes of fusions of AP(2) which are algebraically isomorphic (inside AP(2)) but not combinatorially isomorphic. Given any such class of size at least 2, we call any pair of its members *twins*. Notable examples of twins are the triangular graph T(8) paired with one of the Chang graphs, the (Schurian) pseudocyclic scheme of Mathon paired with the (non-Schurian) pseudocyclic scheme of Hollmann, and a Schurian quasithin scheme with 15 classes paired with a non-Schurian such scheme. (Received August 23, 2005)