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In search of unity: Galois connections and Möbius-Rota inversions. (Portuguese. English summary) [Zbl 1446.06008](#)

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Summary: This paper is organized in two distinct but parallel parts. Our goal is to illustrate the parallel between the usefulness of Galois connections (quasi-inversions) in number theory and of Möbius-Rota inversions in enumerative combinatorics. These tools allow to address apparently hard problems in an illuminating unifying way, by (quasi-)inverting them into much simpler equivalent problems. The common setting is the conceptual point of view of lattice theory.

MSC:

[06A15](#) Galois correspondences, closure operators (in relation to ordered sets)

[05A15](#) Exact enumeration problems, generating functions

Keywords:

complementary sequences; derangements; inclusion-exclusion principle; Galois connection; Möbius inversion; Rota incidence algebra