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On the order of directly indecomposable groups. (In Hungarian. RU, English summary)

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Indecomposable groups of arbitrary even order are easily constructed. In contrast, we show that almost all odd numbers n (i.e., with the exception of a set of density 0) have $(1+o(1))\prod(1-(p-1)^{-1})\log\log n$ prime divisors such that the corresponding Sylow subgroup is a direct factor in every group of order n. The following result holds again for almost all n. Let $n = n_1 n_2$ be a factorization such that all groups of order n decompose as a direct product of subgroups of order n_1 and n_2. Then one of the direct factors is always a cyclic group.

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20D40 Products of subgroups of finite groups
11N05 Distribution of primes

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Indecomposable groups; Sylow subgroup; factorization; direct product of subgroups