Title: Determining congruence n-permutability is hard (n at least 3?)

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Abstract: Building on the work of Freese and Valeriote (On the complexity of some Maltsev conditions, 2009) we reduce a restricted form of the problem of clone membership to the problem of determining whether or not a finite algebra generates a congruence n-permutable variety (for n at least 3). During this process we identify a class of Mal'cev condions which can likewise be the target of reduction for this restricted form of the problem of clone membership. As this form of the problem of clone membership is EXPTIME-complete, this demonstrates the EXPTIME-hardness of every Mal'cev condition within the identified class, including congruence n-permutability (for n at least 3). Naturally we wish to extend this result even further if possible, with an eye towards demonstrating the EXPTIME-completeness of determining congruence 2-permutability as well.