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YET TWO ADDITIONAL LARGE NUMBERS OF SUBUNIVERSES OF FINITE LATTICES

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Abstract

By a subuniverse, we mean a sublattice or the emptyset. We prove that the fourth largest number of subuniverses of an n-element lattice is $43 \cdot 2^{n-6}$ for $n \geq 6$, and the fifth largest number of subuniverses of an n-element lattice is $85 \cdot 2^{n-7}$ for $n \geq 7$. Also, we describe the n-element lattices with exactly $43 \cdot 2^{n-6}$ (for $n \geq 6$) and $85 \cdot 2^{n-7}$ (for $n \geq 7$) subuniverses.

Keywords: finite lattice, sublattice, number of sublattices, subuniverse.

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References

[1] G. Czédli, *A note on finite lattices with many congruences*, Acta Universitatis Matthiae Belii, Series Mathematics Online (2018) 22–28.
http://actamath.savbb.sk/pdf/oacta2018003.pdf

[2] G. Czédli, *Lattices with many congruences are planar*, Algebra Universalis (2019) 80:16.
doi:10.1007/s00012-019-0589-1

[3] G. Czédli, *Eighty-three sublattices and planarity.*
http://arxiv.org/abs/1807.08384

[4] G. Czédli, *Finite semilattices with many congruences*, (Order).
doi:10.1007/s11083-018-9464-5

[5] G. Czédli and E.K. Horváth, *A note on lattices with many sublattices.*
https://arxiv.org/abs/1812.11512

[6] G. Grätzer, Lattice Theory: Foundation (Birkhäuser Verlag, Basel, 2011).
doi:10.1007/978-3-0348-0018-1

[7] I. Rival and R. Wille, *Lattices freely generated by partially ordered sets: which can be "drawn"?*, J. Reine Angew. Math. **310** (1979) 56–80. doi:10.1515/crll.1979.310.56

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