

[PL2 4 * 1973]

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CONGRESSUS NUMERANTIUM VIII

PROCEEDINGS OF THE FOURTH
SOUTHEASTERN CONFERENCE
ON COMBINATORICS,
GRAPH THEORY, AND COMPUTING

Florida Atlantic University

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2 pages from article by Butler and Markovskiy,
"Enumeration of finite topologies",
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"additional refs"

For convenience we provide the following table. These values were obtained by Wright [18] with the help of a computer. The last two rows of the table below were independently obtained by Evans, Harary, and Lynn [9] in terms of transitive digraphs.

TABLE

n	1	2	3	4	5	6	7
$\bar{P}^C(n)$	1	1	3	10	44	238	1650
$\bar{Q}^C(n)$	1	2	6	21	94	521	3485
$\bar{P}(n)$	1	2	5	16	63	318	2045
$\bar{Q}(n)$	1	3	9	33	139	718	4535
$P^C(n)$	1	2	12	146	3060	101642	5106612
$Q^C(n)$	1	3	19	233	4851	158175	7724333
$P(n)$	1	3	19	219	4231	130023	6129859
$Q(n)$	1	4	29	355	6942	209527	9535241

N1152 ✓ A608
 N 648 1928
 N 588 112 ✓
 N1133 1930 -
 N809 1927 -
 N1245 1929
 N1244 1035
 (N1476) 798

REMARK 5. It is easy to show that: (i) $P^C(n)$ is even for all $n > 1$,
 (ii) $Q^C(n)$ and $P(n)$ are odd for all $n > 1$ [14].

REFERENCES

1. P. S. Aleksandrov, Combinatorial Topology, Vol. 1, Graylock, Rochester, N. Y., 1956.
2. G. Birkhoff, Lattice Theory, 3rd Ed., Amer. Math. Soc., Col. Publication, 25, Providence, R. I., 1967.
3. R. L. Blair, Stone's topology for a binary relations, *Duke Math. J.*, 22 (1955), 271-280.
4. K. K.-H. Butler, The number of partially ordered sets, *J. Combinatorial Theory*, Series B, 13 (1972), 276-289.
5. _____, The number of open sets of finite topologies, to appear in the Proc. of Topology Conference, Virginia Polytechnic Institute, Blacksburg, Va., March, 1973.
6. _____, Combinatorial properties of binary semigroups, to appear in the Proc. of Miniconference on Algebraic Semigroup Theory, Szeged, Hungary, August, 1972.
7. S. D. Chatterji, The number of topologies on n points, Kent State University, NASA Technical Report, 1966.
8. L. Comtet, Recouvrements, bases, de filtre et topologies d'un ensemble fini, *C. R. Acad. Sci. Paris. Ser. A-B* 262 (1966), A1091-A1094.
MR 34 #1209
9. J. Evans, F. Harary, and M. Lynn, On the computer enumeration of finite topologies, *Comm. ACM.*, 10 (1967), 295-298.
10. O. Gross, Preferential arrangements, *Amer. Math. Monthly*, 69 (1962), 4-8.
11. D. Kleitman and B. Rothchild, The number of finite topologies, *Proc. of Amer. Math. Soc.*, 25 (1970), 276-282.