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copy

Professor R.K. Guy
Mathematics Department
University of Calgary
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Dear Professor Guy:

The (unlabelled, unordered) binary trees with n terminal nodes
can indeed be interpreted as representing the "structure" of a

Narayana-Capell numbers T_n enumerate, their verbal description
notwithstanding. It seems that T_n is the number of sequences
of integers corresponding to the number of matches in the
consecutive rounds of a knock-out tournament on n players. The
same tree-structure can realize different sequences -
realizes both $(2,1)$ and $(1,1,1)$ - and different trees can realize

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88-03-22

Dr. John W. Moon,
Department of Mathematics,
University of Alberta,
Edmonton, Alberta T6G 2H1

Dear John,

I don't know whether Naravana or Capell still exist.

but no doubt you'll consult them if they do. I've just been looking at their paper, On knock-out tournaments, *Canad. Math. Bull.* 13 (1970) 108, and they enumerate the number, T_n , of "random (knock-out) tournaments" for n players as

n	(1)	2	3	4	5	6	7	8	9	10	11
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T_n	(1)	1	1	2	3	6	11	22	42	84	165
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My naive guess is that these should be the same as the number of binary trees (= Wedderburn-Etherington numbers

85-93 and see Comtet, *Advanced Combinatorics*, Dordrecht, 1974, p.54) and sequence 297 in Sloane's *Handbook of Integer Sequences* should coincide with sequence 298: ... 6, 11, 23, 46, 98, 207, 451,

Am I wrong?

Best wishes,

Yours sincerely,

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88-03-31

Professor John W. Moon,
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Dear John,

Many thanks for clarifying Capell-Narayana. I was

The first difference occurs for 6 players. They
distinguish between



and



but not

