



DEPARTMENT OF THE NAVY
UNITED STATES NAVAL ACADEMY
ANNAPOLIS, MARYLAND 21402

2464
2493

24 Mar 80

Dear Neal,

Here is a collection of some of my recent articles. I think the one on Pseudosimilar vertices is the most intriguing.

As long as I am writing, let me comment on a couple sequences in your book:

818	Hertsprungs Problem	2464
2017	Kings Problem	2493

Sequence 818 is the number of ways to arrange n nonattacking kings on an $n \times n$ chess board with 1 king in every row and column. Thus I would be inclined to call it "Kings Problem" or "Nonattacking Kings"

Sequence 2017 is the same problem when the left and right sides are identified to form a cylinder. I would call it "Cylindrical Kings Problem"

A third variant is possible - also identify top and bottom edge to form the "toroidal kings problem".

All 3 variations can be analyzed by inclusion-exclusion plus generating fans. I thought I had something new until your book sent me to the Riordan



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reference when I found 80% of my results and so I abandoned the problems.

I am enclosing a computer computation. The numbers are reliable up through the $n=23$ row. These extend sequence 818.

Of course $A_n \sim \frac{n!}{e^2}$

I could also extend sequence 2017 and provide terms for the toroidal variant if anyone cares. However, I have essentially lost interest and do not plan to publish anything on this.

Incidentally, the current ^{Amer. Math} Monthly has (in my opinion) a rather poor treatment of the first kings problem in slightly different language.

Formulas better than the double sum in eqn (7) p 123, Feb 1980 exist.

Sincerely

Allen

2464

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SAVE 10:19:37 01/24/70
LOOP

A_n

sequence 818

4: 2
5: 14
6: 90
7: 040
8: 5 242
9: 47 022
10: 479 306
11: 5 290 790
12: 63 779 034
13: 831 283 553
14: 11 661 506 218
15: 175 203 184 374
16: 2 806 878 055 610
17: 47 767 457 130 566
18: 860 568 917 787 402
19: 16 362 835 542 699 802
20: 327 460 573 946 510 746
21: 6 860 329 406 055 690 790
22: 151 435 547 414 567 736 234
23: 3 484 423 186 862 152 966 838

24: WARNING!
WARNING!
WARNING!
WARNING!
83 655 120 041 771 262 574 453

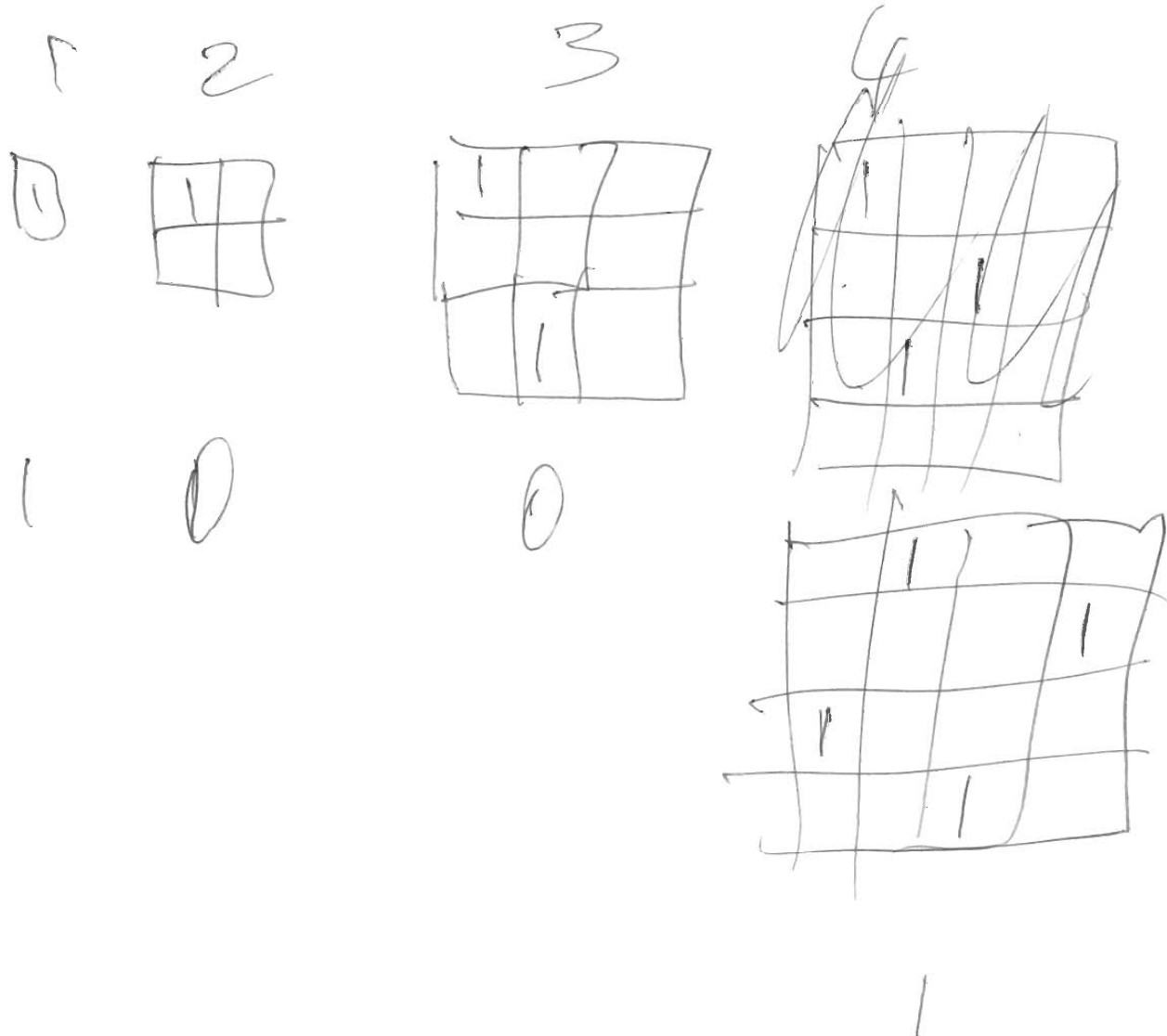
25: WARNING!
INQ1
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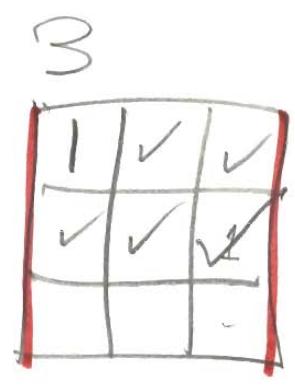
2493



1

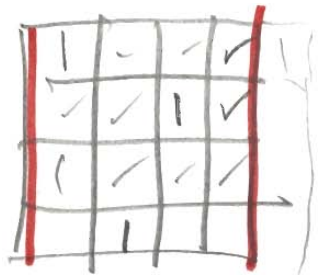


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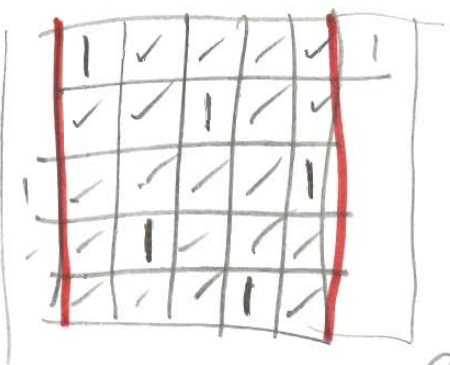
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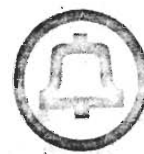
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5



Looks like 1
or 10?

10



Bell Laboratories

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April 1, 1980

Dr. Allen J. Schwenk
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Annapolis, Maryland 21402

Dear Allen:

Thanks for your letter and the reprints. Too bad to find yourself anticipated, but I'm glad the Handbook was useful.

I'm going to try and put a second edition of the Handbook together this summer, so please send me anything else that has sequences in it.

All the best,

MH-1216-NJAS-mv

N. J. A. Sloane