

KNIGHTS AWAY

On an N -sided chessboard, what is the maximum number of pieces that can be placed so that no two are closer than a knight's move from each other?

Possible patterns for the first 8 cases are shown on the facing page, leading to the table:

N	n	N	n
1	1	5	6
2	1	6	8
3	2	7	10
4	4	8	13

What are the values of n for $N = 9, 10, 11, \dots$?

PROBLEM 178

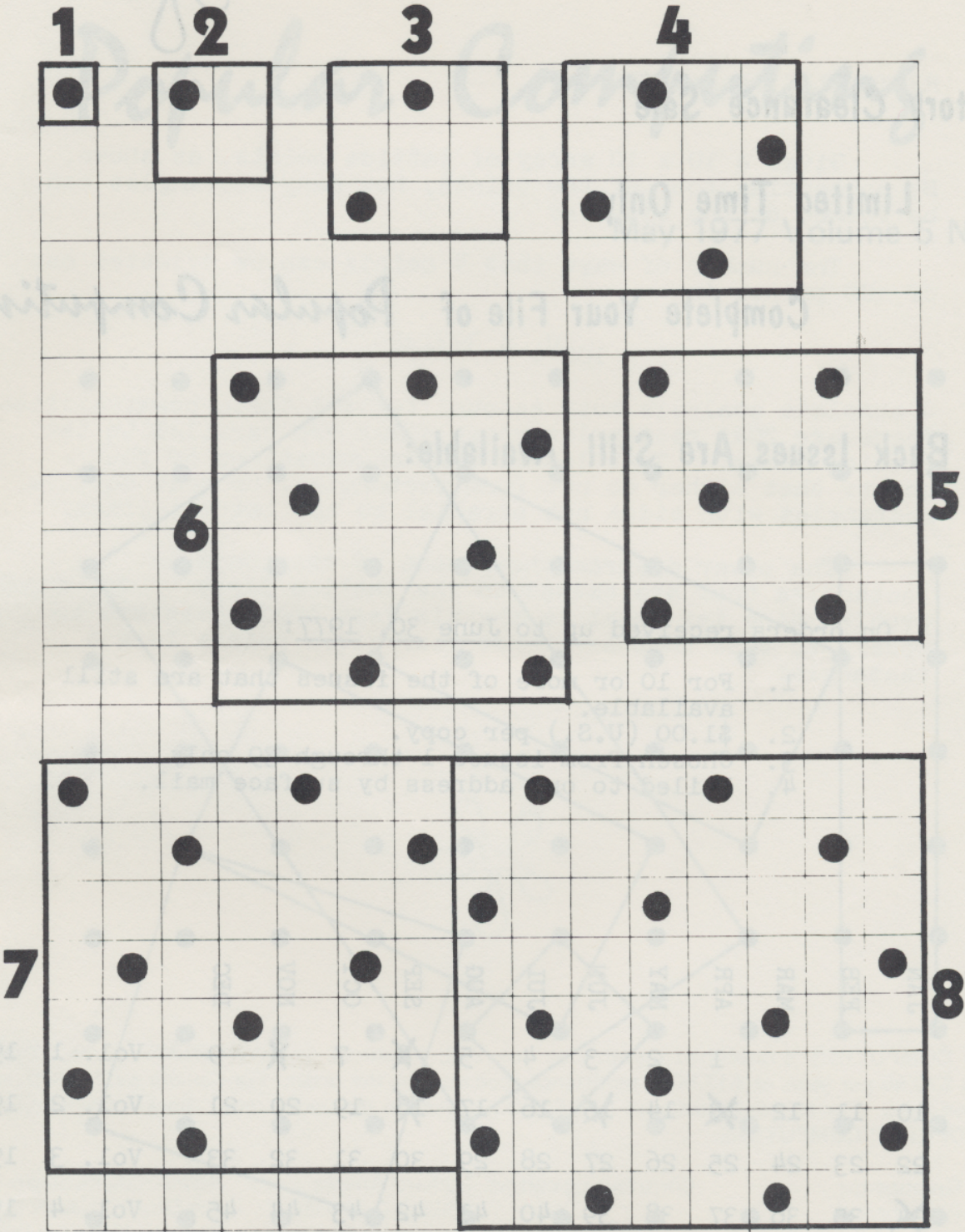
Gosper

It is obvious that the subject of high precision arithmetic intrigues us. We keep getting references to the work of R. W. Gosper, currently at Stanford, as being outstanding in this area. So we wrote to Mr. Gosper to inquire into his work:

"Can you take an arbitrary constant, say the 7th root of 306 [see PC48-6] and calculate a thousand places or so?"

Mr. Gosper could. We now have that constant to 2800 significant digits, beginning with:

2
 2651817862 9569774774 5672132632 7241189213 1448486969
 9946531670 9048414227 4205493475 1549122216 2148541898
 4950568931 2038116592 0897070048 2412823318 8382049008
 9862401932 3379113007 9912490219 2500532037 4618587150...



Rectangles On A Lattice