The Mathematical Log

VOLUME 26, NUMBER 2 DECEMBER 1981

Giant 'Word Search' and 'Scrambled' Variants Yield Open-Ended 'Math-Word' Challenges

E D R O H C O R E D O M I N O I S S E R G O R P O
O N F S Y M M E T R Y R P E N O T W E N R O E E U
N H I S P I R A L L I E L T Q U A D R A T I C U T
O C B L O T N E G N A T A T E S S E R A C T I L N
I N O S T E A C O P E R N I C U S W R L N Y P E E
T I N U E R X I R O T C E V X S K E W A E R R R I
A M A C N O I T C E S R E T N I M D C E C R O U T
T E C O U T S E R I E S D D A U L E Y R N O C T O
U D C F S E E F U N C T I O N L S T W O E T A N U
M I I L E M R R S Z E R O D A M I N U S R C L A Q
R A L U C I D N E P R E P X I V S R E M E A N N U
E N T C U R V E N X E S I N I S I U D O F F E I P
P O N E Z P E T E S A O E T T C C M R A M E N M A
E L E M E N T O H O M M U T O N A R L D U B O R R
N U I D E N T I T Y N B P S R R I O I E C Q C E A
A O C E N I E T S N I E A L G A G O T M R H A T M
I O I L L N P R O R E H A O E A C O P I I K E E E
L M F N I L I A T O E C L S R X T S G M C N R D T
X O F S U D B S A D R E U I E P O H E E N O A R E
I D E S L S I O R E L T T L M C T D R D D T A N R
R U O L C D I O E L B H F Y R T E M O N O G I R T
T L C I I T N X A O M E S A B S P H E R E G E M C
A U S O A L Y R D E R A H Y P O T H E S I S O U T
M S I R O T A N I M O N E D E D D E G R E E B S N
A N G L E P R G I N T E G E R D A L O B R E P Y H

Competitions, anyone? How about word searches, starting with this 25 x 25 giant richly spiked with hauntingly familiar mathematical terms. Then word searches with an unusual twist, a cluster of mathematically related challenges calculated to enliven a Mu Alpha Theta chapter agenda and to keep Log correspondence coming in for months! Read on!

As an opener, reproduced above is our Giant California Mathematical Word Search, whomped up by the Editor for circulation at our UCLA 11th National Convention in August. Try this one first. In team or individual competition, it should be good for a meeting in itself. Our California Giant conceals 100 or more common mathematical words--terms, names, etc. Seek them horizontally, vertically, diagonally, forwards and backwards, but not (in this instance) "around corners." List your words, count them, then score 1 point per letter for each different word that you find. Don't list "words within words" in this first word search: in any such situations, record and score the longer word.

You may find it helpful to type or hand letter an enlarged version of the California Giant, then run off abundant "working copies" for the members of your group.

As a related and nontrivial exercise, attempt a classification of the mathematical words you find.

Develop a "system" and 100 words shouldn't be too hard to find. Remember: 1 point per letter, and the highest score wins. The Log would be interested in reporting how you made out!

So much for the traditional word search, familiar, but still fun. Now for the "spinoffs," something different, and in themselves worthy grist for the Mu Alpha Theta chapter mill.

(Continued on page 5)

GOVERNORS APPROVE SPECIAL PATCH FOR MATHEMATICAL LOG SUPPORTERS

"Logmasters," those who set themselves apart by outstanding support of The Mathematical Log, will be receiving this distinctive patch in months to come. Mu Alpha Theta Governors at their UCLA meeting gave approval to the Editor's recommendation for such recognition for writers, problem solvers, etc. Artwork is by Ali R. Amir-Moéz, himself an outstanding Log supporter.

The Mathematical Log

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KEY WEST CHAPTER READY TO SHARE UNIQUE RECIPE COMPILATION

Mu Alpha Theta chapters, by and large, frequently show two perhaps unexpected strengths: their school spirit actively involves them in the greatest diversity of projects and worthwhile events, and they're good fund-raisers for what they perceive as a worthy cause.

From Key West High School, Key West, FL, comes a report that effectively underlines both points.

Recipes from Key West and Other Places is a Mu Alpha Theta student project, with a professional cookbook publisher as printer. According to Mr. Orris Avant, chapter sponsor, the cookbook is "one of the best I've seen."

"The material is top quality, and the recipes are widespread and varied," Mr. Avant notes.

Funds raised from the project help send the club to mathematics competitions. In addition, the club sponsors scholarships and awards totalling over one thousand dollars.

Recipes from Key West may be obtained for $5.75 (postage included) from Mu Alpha Theta, Key West High School, 2100 Flagler Ave., Key West, FL 33040.

SHOPPING SPREE! A committee heads for the hobby shop to stock up on mathematical and logical games for the Chapter collection.

EDITORIAL REFLECTIONS

A collective "You're most welcome!" to the scores of thoughtful Mu Alpha Theta enthusiasts who went out of their way to say "Thank you" for The Log at our big and bustling 11th National Convention in August at UCLA. We, in turn, record our gratitude to our busy National Office, our sponsors, our contributors and correspondents, and to the extra-busy Fred Hansen and Ronald Klint who coordinated our first Southern California convention. (It's St. Louis in 1982, with energetic, ambitious Akehiko Takahashi at the helm.) We want, too, to assure you that your Log is in good health. Your Governing Council has approved four issues for 1981-82, with up to six pages. With the untimely passing of The Mathematics Student (the NCTM student publication), a victim of rising costs, the Log's new vitality takes on even greater importance. Issues will be dated December, February, April, and October, with deadlines the 1st of the previously-named month--that is, February 1st for the April issue, April 1st for the October issue, which will be published in late Spring.

Since our 1st National Convention, held at Trinity University, San Antonio in 1968, national meetings have taken place in Pennsylvania (twice), Louisiana, Wisconsin (twice), Arkansas, Iowa, Alabama, Georgia, and California. Planning these national meetings calls for considerable lead time, of course. We understand from Governing Council deliberations that queries from chapters wishing to "host" 1983 and subsequent Conventions would be welcomed at this time.

The Log is pleased to congratulate Edward Rimland, Mu Alpha Theta president at Miami Coral Park Senior High School, Miami, FL. At UCLA, Edward was named "outstanding Mu Alpha Theta member" and recipient of the Robert Kalin Award.

The Secretary's Report to Governing Council underlined the continuing sound health of Mu Alpha Theta. A record high of 19 365 new members was recorded in 1980-81. Ninety-five new chapters brought the total on the active roster to approximately 1175.

We hope to have fuller coverage of our outstanding UCLA Convention (including photographs) next issue. Plus news of plans and hopes for "the 12th" at St. Louis. Plus your submissions, especially state and chapter news you want to share. H.D.A.

Can You Do Better?

123 MOVES BEST REPORTED SOLUTION TO LOG'S SLIDING-BLOCK CHALLENGE

The delightful ten-piece "sliding block puzzle" featured in the Spring 1981 Log can be solved--no one has had serious doubt about that. The challenge to this readily-constructed "U-Make-It" has been to find not only a solution but an optimal solution. In how few "moves" can the deceptively tricky puzzle be solved?

One hundred twenty-three moves, suggests Math-Jeunes, the French-language, Belgian student mathematics journal which originally carried the interesting "sliding block" challenge. This "best solution" is credited by Math-Jeunes to Mme Claudine Festraets. The solution, in full, is reproduced below. Log readers are invited to submit solutions that solve the puzzle in less than 123 moves.

Recall that the ten "blocks" comprised four unit squares, five 2x1 rectangles, and one 2x2 square, all within a 4x5 unit frame. Taking one unit to be 2 cm is a good scale. Fig. 1, below, shows the initial arrangement of blocks. The shaded area is empty. The object of the game is as follows: by sliding the pieces into empty spaces, one move at a time, to bring the large (2x2) square to the lower, center position, as depicted in Fig. 2.

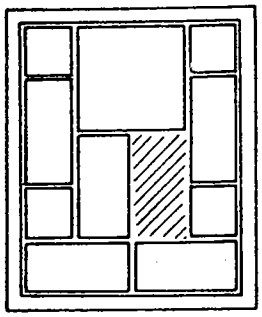


Fig. 1

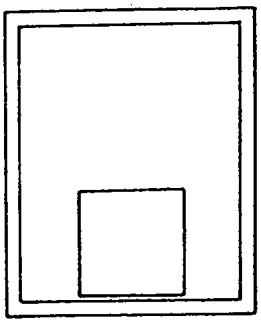


Fig. 2

A useful notation for recording moves labels the ten pieces a through j (Fig. 3): if the move is to slide d to the left, one writes d←; if, then, d is slid upwards, d↑; more compactly, these two moves can de described as d←↑. Next, if i is raised, one writes i↑; and so on.

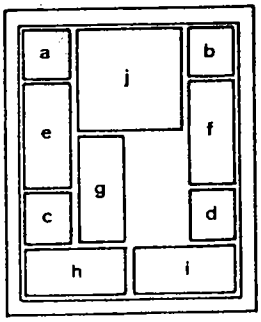
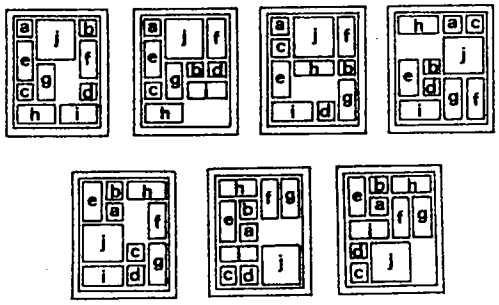


Fig. 3

The 123 moves of the Math-Jeunes "best solution" are recapitulated in that journal as follows:

1 d←	2 d↑	3 i↑	4 h↔	5 c↑	6 c←	7 e↑↑	8 a↑↑	9 j←	10 b←	11 f↑	12 d←	13 b↑↑	14 j←	15 a↑↑	16 e↑↑	17 c←	18 c↑	19 h↔	20 i↑
21 b↑	22 b←	23 g←	24 c←	25 c↑	26 h↑	27 i↔	28 g↑	29 d←	30 b↑	31 g←	32 d↑↑	33 b←	34 g↑	35 d←	36 i←	37 h←	38 e↑↑	39 c←	40 c↑
41 e↑	42 i←	43 d←	44 g↑	45 b←	46 h↑	47 d↑	48 d←	49 i←	50 e↑	51 h←	52 b←	53 g↑	54 i←	55 d↑	56 b↑	57 b←	58 g←	59 f↑↑	60 j←
61 c←	62 c↑	63 h↑	64 b↑	65 d↑	66 e↑	67 i↔	68 g↑	69 f↑	70 j↑	71 c↔	72 a↔	73 h↑	74 b↑	75 b←	76 j←	77 f↑↑	78 g←	79 d←	80 d↑
81 j↑	82 a↑	83 a←	84 c←	85 c↑	86 h↔	87 b↑	88 b←	89 e↑↑	90 j←	91 c↑↑	92 a←	93 b↑	94 h←	95 f↑	96 g↑	97 d←	98 c↑	99 j←	100 e↑↑
101 h←	102 b←	103 a←	104 f←	105 g↑↑	106 j←	107 a↑	108 b←	109 e↑	110 i↑	111 c↔	112 d↔	113 j↑	114 f↑	115 g↑	116 h↔	117 e↑	118 b↑	119 a↑	120 i↑
121 d↑	122 d←	123 j←																	

As a useful check on step-by-step progress, diagrams below, from Math-Jeunes, show the puzzle at the start; after 19, 46, 73, 91, and 113 moves; and at the finish.



dia **Log** *ue*

with the editor

ONE MAN'S EXPERIENCE

TXU H LXPR LHF FHSR UX YF HMXYU UCB JBHTSTN XP YUSWSUQ XI JHUCBJHUSAF: LB LBPB FSJEWQ HFDBR UX BGEWHST CXL HT BKYSWHUBPHW UPSHTNWB AXYWR MB AXTFUPYAUBR MQ UCB STUBPFBAUSXT XI ULX ASPAWBF, HTR UX RX FYJF ST H, M, HTR G STFUBHR XI ST EBTAB HTR FCSWWSTNF, WBHZSTN JB FX SNTXPHTU UCHU S AXTAWYRBR UCHU H HTR M JYFU JBHT BNNF HTR ACBBFB HTR G TXUCSTN, LSUC UCB PBFYWU UCHU S PBOBAUBR HWNBMPH HF TXTFBTFB ... YTUSW ... AXTZSTABR ... UCHU STFUBHR XI MBSTN UHYNCU JHUCBJHUSAF S CHR MBBT JHRB H IXXW XI. --N.M.F.

A certain affinity for numbers and words tend to go together, we find--so when browsing lets us chance upon a good mathematical quote, we like to offer it in cryptogram form. How about this one (above)? Who is N.M.F.? In fact, how many people can you think of who might be identifiable by mere initials?--J.F.K., L.B.J., F.D.R., ...? From the above cryptogram one problem all but leaps out: too many different "one-letter words"! So, perhaps to help a little, we observe that HWNBMPH and BKYSWHUBPHW UPSHTNWB are good mathematical terms, while BNNF HTR ACBBFB decidedly is not.

An added mathematical attraction in the above challenge is that the chosen cipher does not assign letters randomly, as no doubt for "security" it should, but according to a "simple" mathematical rule. Look for the rule, but--alas! --hindsight can be surer than foresight in such a situation.

* * *

For Log readers who enjoy a cryptogram challenge--and our mail suggests there are many--the following brief quotation shows the extent to which a statistical "law of averages" can make itself felt in even a short cipher mes-

(Continued on page 4)

DIALOGUE, FROM PAGE 3

sage. Of the 20 characters that turn up in the 105 letters of the quotation and name, 6 (I, C, A, G, H, E) account for over 60%. We've entitled this cryptogram

INTUITIVELY TRUE

ABCDACAEB (FGHI, JIFGHI, EK FGCLIFGCAMGH) LGN OIIB PKIGCHQ ERIKKGCIS. ABCDACAEB AN CLI KEEC EJ GHH NDTIKCACAEB. --IKAM CIFTHI OIHH.

* * *

Many sponsors share our view that wrestling with a good problem can be one of the better ways of promoting mathematical growth. At Mu Alpha Theta level, such problems might read like these:

Show that from any five integers, not necessarily distinct, one can always choose three of these integers whose sum is divisible by 3.

A hexagon inscribed in a circle has three consecutive sides of length a and three consecutive sides of length b. Determine the radius of the circle.

Four distinct lines L_1, L_2, L_3, L_4 are given in the plane: L_1 and L_2 are respectively parallel to L_3 and L_4. Find the locus of a point moving so that the the sum of its perpendicular distances from the four lines is constant.

Such "good problems" can be hard to come by, every sponsor knows. Recent browsing let us chance upon many hundred, however, and we're pleased to be able to share our source. 1001 Problems in High School Mathematics is being produced by the Canadian Mathematical Society in a preliminary version, with four booklets (400 problems in all, 350 solutions) currently available. Booklets are available from the Society, 577 King Edward Ave., Ottawa, Ontario, Canada K1N 6N5, at Cdn$2.50 each, postpaid. Prepayment is required.

Compilers of the collection (from which the three above questions are selected) are E. Barbeau, M. Klamkin, and W. Moser.

* * *

"We share your belief that more good students should be encouraged to work mathematical problems."

So say Bob Prielipp and N.J. Kuenzi, University of Wisconsin--Oshkosh, co-editors of very possibly the most successful "problem department" to which an interested student could turn for a challenge.

The department runs in School Science and Mathematics, and the editors were writing to give The Log permission to quote Alan Wayne's "Problem 3860," with which we'd been having particular fun.

"What is the smallest integer which can result when a five-digit positive integer (in the decimal system of notation) is divided by the sum of its digits?"

School Science and Mathematics (check with your librarian) long has encouraged submission of student solutions to the problems that it poses.

* * *

"Yes, I do my shopping at Poole, even though it is eight miles from me as the crow flies," said Beryl. "Just a matter of access."

Sam nodded. "That's why we see you so often. But aren't Alton and Bray both nearer to you?" he asked. "I know the three villages are equal distances from each other, making a triangle."

"Sure, but that's what I mean," Beryl replied. "I'm only three miles from Bray and five miles from Alton, but there's no direct road to either."

How far apart were the three villages?

Titled "No Direct Road," that "teaser" is one of exactly 100 "more difficult" puzzlers shared by prolific problemmaker J.A.H. Hunter in his Challenging Mathematical Teasers, recently released by Dover Publications, Inc. (180 Varick St., New York, NY 10014), at $2.75.

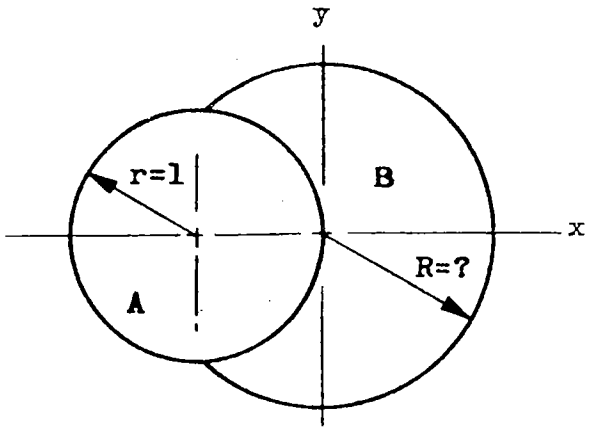
The work includes solutions to all problems, a selection of alphametics, and notes on diophantine equations and congruence arithmetic.

Perhaps representative of the 40 alphametics:

```
  C R A B B Y
  C R A B B Y
    T A B B Y
+       M A Y
-------------
S C R A T C H
```

A worthy addition to school, chapter, or personal library--and, at the Dover price, an uncommon value!

* * *



Given, two circles, the first a unit circle (radius, r = 1), area = A. The second circle (see above) has its center on the first circle, and radius = R. That part of the second circular region which lies outside the first circle has area = B.

For A = B, determine R.

The Past Masters Club, a Toronto-based group of problem solvers, has posed this and similar "simple" questions--which defy simple solutions. The Past Masters' best answer, quoted with their permission: 1.24311673443+!

Should you do better, or as well (!), the Past Masters may be contacted at Box 6427, Station "A," Toronto, Ontario M5W 1X3.

TUTORING PROGRAM PARTICULARS OFFERED BY CHAPTER

Many Mu Alpha Theta chapters pride themselves in lengthy records of school service. Tutoring programs are one of the more significant forms that such service can take.

The Mu Alpha Theta chapter at The Willows Academy (840 Vernon Ave., Glenoe, IL 60022) reports "a very active tutoring program" at their school. Interested chapters are invited to write for full particulars.

RUBIK'S CUBE VARIANTS POSE NEW CHALLENGES

CUBE POWER! As if Rubik's Cube weren't enough (see Fall Log), a host of improbable variants now offer new, if related, challenges. Here Jeanie MacEachern of Port Hood, Cape Breton, considers three from the Editor's growing collection: left to right, a 14-faced, irregular polyhedron (2 square faces, 4 3x1 rectangles, 8 isosceles trapezoids), a cuboctahedron, and a truncated tetrahedron! Cube enthusiasts may want to contact Mu Alpha Theta member Tom Bress, 417 Canyon Dr. S., Lehigh, FL 33936: Tom, who brought his Cube fascination with him to UCLA, may have set something of a Mu Alpha Theta record with a recent Cube solution in 72 seconds. Writes Tom, "That's my record: usually it takes me a minute and a half." Other Cube variants include a distinctive barrel shape (especially good for beginners), and key-ring size miniature Cubes and Barrels.

'MATH-WORD' CHALLENGES, FROM PAGE 1

So much for the traditional word search, familiar, but still fun. Now for the "spinoffs," something different, and in themselves worthy grist for the Mu Alpha Theta chapter mill.

Think about it! "Horizontally, vertically, diagonally, forwards and backwards" are traditional "search" rules, but "words" might go in spirals, or change direction at will! And letter grids might be triangular, hexagonal, or even three-dimensional! But not this issue. We'll limit ourselves to relatively small, rectangular (including square) arrays, but construct them of mathematical words, and allow hidden words (not necessarily mathematical) to "turn corners"! We'll set up point systems for scoring, and leave a diversity of specific challenges for chapters and individuals who'd like to try their hand.

In allowing "corner turning," The Log is adapting what puzzle author Linda Doherty has called the "scrambled word find" (Tempo Scrambled Word Find Puzzles #2--our daughter's favorite!; New York: Grosset & Dunlap, Inc., 1974). Author Doherty uses a 3 x 5 grid of apparently random letters (rich in vowels), and Log readers will begin with this size of array. Interestingly, the popular Games magazine has featured such "entwined" (its term) word searches in two contests, "Chimp-Off-The-Old-Block Contest" (March/April 1978) and "Son of Chimp" (September/October 1978), the Games allusion being to a persistent chimpanzee at a typewriter coming up with its relatively large (7 x 7) "random" arrays. In puzzles of this novel type, letters spell hidden words "up, down, diagonally and around corners" (as Linda Doherty puts it), consecutive letters "touching" (at a side or corner) and the same letter in a puzzle not being visited more than once in spelling out a particular word.

"Words," to be counted (let's agree), must be 3 or more letters in length.

Let's begin our mathematical foray into scrambled searches with the 15-letter grid that seems standard, 3 across and 5 down. We present such a grid constructed entirely of mathematical "short forms."

1.
S I N
L O G
T A N
C O S
M I N

Sine, logarithm, tangent, and cosine are, of course, well-known elementary functions; min, less common in school mathematics, gives the minimum value in a set--thus, min(3, 2, 7) = 2.

Seek "hidden words" in this elementary array. Do not, in such searches, let's agree, count the words used in construction, in this instance the 5 short forms. Do not count extensions (plurals, etc.) of the construction words, or words wholly contained within one construction word. In general, however, do (in scrambled searches) count and score separately plurals, words within words, verb forms, etc. Rules are arbitrary, and the game should be more fun this way!

Let's rule out, however, capitalized words. No Goa (the former Portugese colony) Taos (the New Mexico town), Lois, or Simon from the above grid!

Apart from the above rules and restrictions, have a good dictionary as your judge, and just about anything goes! You may "disentangle" 70, 80, even 90 or more words--including 8- and 9-letter mathematical terms. At 1 point per letter (let's agree), totals in excess of 400 points should be attainable. Have fun!

Apart from the above rules and restrictions, have a good dictionary as your judge, and just about anything goes! You may "disentangle" 70, 80, even 90 or more words--including 8- and 9-letter mathematical terms. At 1 point per letter (let's agree), totals in excess of 400 points should be attainable. Have fun!

Now, take our "scrambled words" activity one giant step further. Here is a sample of what can be done, a 3 x 5 grid constructed entirely of 3-letter mathematical words.

2.
S E T
O N E
S U M
A R E
R O D

"Are," for the record, is the root word for hectare, the international unit of land measure (100 ha = 1km^2).

Again, seek "entwined" words--including, this time, a 6-letter "academic" word, a 5-letter "criminal" term, and 4-letter mathematical and physical science terms! Count words, as before. At 1 point per letter, total your score.

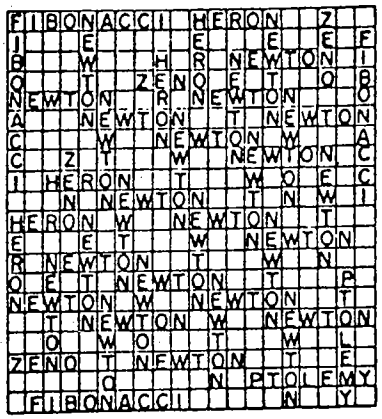
Now the real challenge! Choose your own 3-letter mathematical words and/or short forms. So

(Concluded on page 6)

back Log...

Old Logs, it would seem, never die. The challenges that they offer persist to confront a new year of members. "BackLog" looks to such "old" challenges, and to worthwhile results being received from interested readers.

Our Fall Log presented impressive results by Mike Purcell and Terry Bridgman in our mathematical names "'Crosswords' Challenge"--but with the observation that "we're not sure we've heard the last word." What may well be "the last word" on the subject comes from Mark Stapel, Knoxville, TN. Mike claims a 300 total, with the following as his winning solution. Note the symmetry.



Mike's "300" was widely circulated at our UCLA gettogether, and no one has equalled it. The popularity of this mathematics-related "Crosswords" has led us to produce a new version for next issue.

"Representations"? Responding to the "Boxcar" challenge (Winter Log), Jim Foerster, Spring, TX, submitted representations of 1 through 112, using (in each instance) a 3, a 6, a 9, and a 2 (in any order). He acknowledged help from Tim Grose and Truman Joe, and encouragement from sponsor Mrs. Sheri Esmond.

As Jim now knows, 113 can be written using a 3, a 6, a 9, and a 2--as:

$$\sqrt{(.2)^{-6}} - 9 - 3.$$

How much higher can representations be extended? Puzzlist J.A.H. Hunter, in correspondence, suggests that the true "limit" is 141.

"Four jolly men sat down to play . . .," in our telephone dial "correspondence" (Fall Log), and Tom Bress, Riverdale Chapter, Fort Myers, FL, was first with a full solution. Tom caught the substitution of KW for QU in "quite," necessary since there is no Q on the North American phone dial. "Might have given us a little warning!" Tom exclaims.

Janine Sanwo, Kingsburg High School, Kingsburg, CA, and Tim Grose, Klein High School, Spring, TX, can be added to the growing list of solvers of the Lewis Carroll "pigpen" cryptogram.

"If you went to bed at 8:00 at night and set the alarm to get you up at 9:00 in the morning, how many hours of sleep would you get?"

One, asserts Jennifer Olson, Western Springs, IL, the most recent to complete "A Wit-Twisting Arithmetical Apptitude Test" which Dr. Betty Lichtenberg ran in The Log of Winter 1980.

THAT'S LOGIC!

ABCDEFGHGIJ, GK GD HFI IB, GD LGMND OJ; FCP GK GD HJEJ IB, GD HBQRP OJ; OQD FI GD GIC'D, GD FGC'D. DNFD'I RBMGA.

--DHJJPRJPJJ.

'MATH-WORD' CHALLENGES, FROM PAGE 5

select and so permute them as to obtain the highest possible (!) word count and the highest possible point score.

The Log would be interested in learning--and in sharing--your choice of words for your 3 x 5 and your highest total and point score.

But, when you think about it, why a 3 x 5 grid? Why not, say, a 5 x 3? To explore further, list "entanglements" that you find in the following 5 x 3 array of familiar mathematical words. At 1 point per letter, add up your score.

3. THETA
FOCUS
PRIME

This total, somehow, is less impressive. Can you discover other 5-letter mathematical words that will yield even higher word counts or point scores? Let's hear from you.

Then, too, what of the possibilities that exist in the great diversity of mathematical 4-letter words? Consider 4-letter words arranged, as below, in a 4 x 4 array. This quartet conceals a 6-letter crime and a 7-letter earth science term.

4. BASE
FOUR
MILE
SURD

An impressive total. But with the right choice and right ordering of 4 mathematical 4-letter words, even higher totals, no doubt, can be reached. Let us know!

One further extension, to a mathematical counterpart to Games' efforts of the typewriting chimps. Select 7 7-letter mathematical words to substitute for the chimp's apparently random 7 x 7 grid. Here's our initial effort, concealing (by our count) well over 200 "entangled" words.

5. MINUEND
OCTAGON
NUMERAL
ALGEBRA
SEGMENT
INVERSE
ELLIPSE

Your Games-like challenge: list the 20 longest "entangled" words that you find in the above 7 x 7 array. Score them, at 1 point a letter. Let's hear your total score.

Now, The Log's ultimate challenge:

Choose your own septet of 7-letter mathematical words, and so select and so arrange them as to obtain the highest possible "count" of "entangled" words and, on the longest 20, the highest possible score.

We expect we'll be hearing from you--and sharing your findings--over the next several issues! H.D.A.