Noesis

The Journal of the Noetic Society

(Issue 18, September 1987)

Editorial

Ronald K. Hoeflin
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New member: C. M. Langan, who was among the nine persons listed in issue 16, page 1, has agreed to join. All I know about Mr. Langan except his address is that he is a 35-year-old male.

Joshua Taylor, who was another of the nine persons listed as newly qualified in issue 16, apparently collaborated with someone else on the Mega Test, so I disqualified him from joining.

I sent copies of issue 17 to six of the seven remaining persons on the list in hopes that perhaps one or two more might decide to join us. I ran out of spare copies before getting to the final person on the list.

Back issues: S. W. Woolsey sent me $10.00 for copies of all the back issues starting with issue 1, so I will probably reduce the first eight issues to this size and send you each a copy so that you will have a uniform set of this newsletter. I hope to include the first two issues bound together along with the present issue 18. I expect to complete this project by the time I reach issue 24, which will probably be my last issue as editor.

Proposed meeting: The following three pages reproduce a cover letter and proposal for a general meeting of the Noetic Society by Chris Cole. He asks for your input concerning the best time and place for such a meeting.

Concerning the topic of the meeting, if my tests are to be discussed, I would prefer that more general psychological and philosophical aspects of intelligence and intelligence-testing be emphasized rather than specific reference books and the like.

Trial Test "F": The remainder of this issue is taken up with my Trial Test "F", which I believe should yield enough satisfactory problems for me to complete two multiple-choice tests for Omni magazine by the end of the year. I now anticipate that the main test will consist of 48 problems, like my Mega Test, including 24 verbal analogies and 24 non-verbal problems. The latter, however, will not be divided into two equal spatial and numerical sections but will probably consist of eight 3-problem sections of the following types: (1) overlapping squares, (2) painting the sides of polyhedra black and white, (3) ants crawling along the edges of polyhedra, (4) number sequences, (5) building-block problems using lines, squares, and cubes as the "blocks", (6) three relatively easier interpenetrating-figure problems, (7) three relatively more difficult interpenetrating-figure problems, and (8) three miscellaneous problems. The answers to this test will not be revealed and the test will be scored for $5.00. There will be a supplementary test consisting of from 40 to 48 problems, the answers to which will be provided in the test booklet, which will be sold for an additional $5.00.

Letter to the Editor

Chris Cole
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Dear Ron:

Enclosed please find the submission for Noesis about the proposed meeting. I have tried to make it dark enough that you don't need to retype it. I don't think P=NP will attract enough general interest, although in the long run it certainly interests me (and Dean). I have abandoned the idea of a Summer meeting, and instead have solicited suggestions.

I looked at Kevin Langdon's test. I don't think you need to worry: the problems are not interesting enough to work on.

I apologize for not having returned Trial Test D yet. I am about finished, but given my current schedule I think it will take another couple

of weeks.

As far as legitimizing your tests and attracting a larger membership, have you considered distribution in a more "mainstream" magazine? I wonder if Michael Stueben of "Discover" would be interested? He seems like the right kind of person, and the magazine has had problems with low subscriptions. Your test could be a real boost. Especially since the magazine was recently purchased. Worth a try?

Sincerely,

Ch

P.S. By the way, the same remarks apply to "Scientific American."

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While I have not given up on the idea of establishing an online network of Noetic Society members (more about this later), I would like to try to organize a meeting of the members. The primary purpose of the meeting would be to form a more cohesive and productive Society, but this goal is too vague to motivate people to travel to a meeting. Dean and I have discussed more tempting meeting agendas, but we do not know enough about the members' interests to come to any firm conclusions.

However, there is one meeting topic which is presumably of interest to all Society members: namely, techniques for solving Ron's tests. All of us would profit from comparing our techniques with other members'. For example, Dean and I have compiled the following agenda sketch, and I invite members to add to the sketch and to call or write me about possible meeting venues and dates.

TECHNIQUES FOR SOLVING RON HOEFLIN's TESTS
Meeting of the Noetic Society
Agenda Sketch

I. Verbal Problems
  A. Written Reference Works
    i. Thesauri
    ii. Dictionaries
    iii. Encyclopedias
    iv. Books of Quotations
    v. Books of Idioms
  B. Computerized Reference Works
    ii. Microsoft Bookshelf
    iii. University of California Melvyl
II. Quantitative Problems
  A. Searching the Literature
    i. Institute for Scientific Information
      a. Written Reference Works
        1. Science Citation Index
      b. Computerized Reference Works
        1. CompuMath
        2. SCISearch
    ii. Other Reference Works
  B. Finding Patterns in Series
    i. Systematic Transformation of Series
    ii. N. J. A. Sloane's Handbook of Integer Sequences
    iii. Combinations of Fundamental Constants
  C. Computerized Search Techniques

Trial Test "F"

Ronald K. Hoeflin
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This is the sixth test in this series. I will have to look at the results of this test before deciding whether another test will be needed.

The scoring fee is $5 for members of the Noetic and Triple Nine Societies and $6 for non-members, except for those who paid $25 for the entire series. ("Noetic" is the new name of the Titan Society.)

As usual, you are allowed to use any reference aids but should not consult others. Allow yourself approximately a month on the test. Send your answers and scoring fee to the address given above. The fee for Triple Nine and Noetic Society members will be waived for any who consider it even a minor hardship.

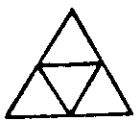
Verbal Problems

You may give just the first letter of the word that you consider to be the correct solution to each of the following:

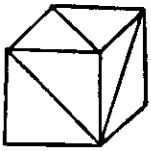
1. Cry : Hue :: Excursions : ?
2. 753 B.C. (geopolitics) : Roman Empire :: 1054 A.D. (astrophysics) : ?
3. Self : Egomaniac :: Alcoholic : ?
4. Strip : Mobius :: Bottle : ?
5. The set of sets that are not members of themselves : Russell :: The darkness of the night sky : ?
6. Measureless to man : Caverns :: Sacred River : ?
7. Money : Yen :: Paper folding : ?
8. Yearly : Annual :: Weekly : ?
9. Teaching : Pedagogic :: Uplifting : ?
10. St. Jerome : Vulgate :: 70 Jewish scholars : ?

Non-Verbal Problems

11. Suppose each side of a tetrahedron is divided into four identical equilateral triangles as shown at right. Suppose that each and every triangle on all four sides of the tetrahedron is painted white or black. In how many distinctive patterns can the entire tetrahedron be painted, including all four sides in each pattern? Two patterns should be considered identical if one can be made the same as the other merely by rotating the tetrahedron.



12. On each side of a cube a line is drawn from any of the four corners to the diagonally opposite corner. Each and every triangle thus formed is then painted either black or white. In how many distinctive ways can the entire cube thus be painted, including all six sides in each pattern and considering every possible variation in the orientation of the diagonal lines? Two patterns should be considered identiaal if one can be made the same as the other by rotating the cube.



What number comes next in each of these sequences?

13. 0 9 23 30 35 49 58 73 94 ?

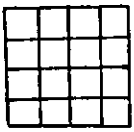
14. 2 8 31 88 199 384 659 1056 ?

15. 2 8 2 3 4 9 4 5 9 8 ?

16. What is the maximum number of bounded areas possible when a triangle is intersected by three semicircles, the semicircles not necessarily being of equal size? (The endpoints of each semicricle are not joined by a straight line.)

17. Suppose a spherical lump of clay is sliced eight times by perfectly straight (i.e., planar) knife strokes, the pieces formed thereby never being rearranged. What is the maximum number of pieces into which the sphere can thus be divided?

18. Suppose that a square sheet of floor tiling is divided by chalk marks into sixteen equal squares as depicted at right. Suppose that ten of the smaller squares are sliced off with a knife, leaving six of them connected together in one solid piece (i.e., a piece that could have been formed by gluing square tiles together one by one such that each new piece added is joined to at least one of the previously laid pieces along the full length of at least one of its sides). How many distinct shapes could be formed in this way, including all six squares in each shape and assuming that two shapes are identical (and hence are to be counted as a single shape) if one can be made to look the same as the other merely by a rigid rotation of either of the shapes without lifting any part off the floor?



19. Suppose a cubical block of material is marked off into an array of 27 identical smaller cubes as depicted at right. Suppose that 21 of the smaller cubes are sliced off with a knife, leaving just six of them that are connected together in one solid piece (i.e., a piece that could have been formed by gluing the smaller cubes together one by one such that each new piece added is joined to at least one of the previously laid pieces along the full surface of at least one of its six sides). How many distinct shapes could be formed in this way, including all six smaller cubes in each shape and assuming that two shapes are identical (and hence are to be counted as a single shape) if one can be made to look the same as the other from all possible perspectives merely by a rigid rotation of either of the shapes?

20. Try problem 11 again, but this time divide each face of the tetrahedron into three (rather than four) equal triangles as shown at right. Again determine the total number of black and white patterns possible for the tetrahedron as a whole.

21. Try problem 12 again, but this time divide each face of the cube into four (rather than two) equal triangles as depicted at right. Again determine the total number of black and white patterns possible for the cube as a whole.

22. Try problem 18 again, but this time slice off any two (rather than ten) of the smaller squares and determine how many distinct shapes are possible.

23. Try problem 19 again, but this time slice off any three (rather than 21) of the smaller cubes and determine how many distinct shapes are possible. (The central or core cube may be sliced out without also removing one of the six cubes that fit against its six sides.)

24. There are 7 cans arranged in a circle. Each contains 6 marbles. There are a total of 21 white and 21 black marbles, whose colors are distributed randomly in the cans. Suppose you try to rearrange the marbles so that there are 6 white marbles in one can, 5 white and 1 black in another, 4 white and 2 black in another, 3 white and 3 black in another, 2 white and 4 black in another, 1 white and 5 black in another, and 6 black and 0 white in the remaining can. Suppose you must proceed clockwise, starting at any can, and take one marble from each can, which you place in the can situated immediately on the counterclockwise side of that can. You are allowed to see the colors of all of the marbles and pick whichever color will lead most expeditiously to the completion of your task. You are not allowed to skip any cans as you proceed around the circle, however. If each marble moved is counted as one "move," what is the maximum number of moves necessary to complete the task, assuming that one always makes the moves that will lead most expeditiously to the completion of the task, given all the possible initial arrangements in which the colors of the marbles might be found?

25. Suppose that 40 foot-long metal bars are welded together to form a 16-square-foot grid like the one illustrated in problem 18, resting on a flat surface. Suppose any two of the bars are sliced away so that the remaining bars all remain connected at both ends to other bars that have not been sliced away. How many distinct patterns can thus be formed, assuming that two patterns are distinct (and hence are to be counted as different patterns) only if one cannot be made the same as the other merely by a rigid rotation of the entire pattern, not lifting any portion of the pattern off the flat surface at any time.

26. Try problem 25 again, but this time suppose that 28 of the 40 bars are sliced away. Determine how many distinct shapes can be formed in the prescribed manner with the remaining 12 bars.

27. Suppose that the illustration for problem 19 depicts 144 bars of equal length. Suppose that all but 12 of these bars are removed and that each of the remaining bars is connected at each end with another of the remaining bars. How many different configurations can be formed by these 12 bars, counting two configurations as different only if one cannot be transformed into the other by any rigid movements of either configuration as a whole?