TITANIC

Editorial

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I have changed the name of this journal from "Titania" to "Titanic," although I'm not sure if that is a significant improvement. If you would like to suggest a better name, you are welcome to do so, although I do not guarantee that I will take your advice.

Of the 18 people who have qualified for membership, half have agreed to be members of Titan. Those who have agreed to join and those who have not are listed below:

Agreed to Join	Have Not Yet Agreed
Anthony J. Bruni	Jane V. Clifton
Chris Cole	Solomon Golomb
James Hajicek	William I. Hacker
Eric Hart	Sherry Haines
Dean Inada	David W. Kelsey
Peter Pomfrit	Rick Rosner
Marilyn Mach vos Savant*	John H. Sununu
Cedric Stratton	H. Herbert Taylor
Jeff Ward	James Tetazoo

(*I believe that Marilyn prefers her last name to be filed under "Savant" rather than "vos Savant.")

This will be the last issue that I send to those who have not expressed an interest in membership. Those listed in the right-hand column may join simply by sending me twelve 22¢ stamps.

I will begin to advertise my Mega Test in Mensa Bulletin on a regular basis starting in a month or two. This should insure a slow but steady membership growth for Titan.

I have become aware of a deficiency in problem 26 in my Mega Test. One of the figures will be altered slightly in future printings of the test to remove this defect.

In this issue I include a new test that I designed, part of a series of tests that will culminate in a new super-test that I hope will be of higher quality and difficulty than the Mega Test.

I also enclose a verbal analogies quiz by Peter Pomfrit and a letter from Eric Hart.

In the next issue I will include three more graphs like the ones in issue #2 comparing scores on my test with scores on three other tests: (1) the Stanford-Binet, (2) the California Test of Mental Maturity, and (3) the Langdon Adult Intelligence Test. I will also publish some statistical information concerning these three graphs and the two that were published in issue #2. These graphs and the statistical information are not being published anywhere else, incidentally.

Address Correction: Jeff Ward's address in issue #1 should have been given as 3272 Via Bartolo rather than 3272 Via Barto.

Address Correction: Peter A. Pomfrit's address in issue #1 should have been given as 22 Moat Hall Avenue rather than 22 Moat Hill Avenue.

Address Change: Anthony J. Bruni's new temporary address is P. O. Box 531646, Grand Prairie, TX 75053.

Address Change: I believe Jane V. Clifton's address is now c/o Psychology Dept., University of Waterloo, Waterloo, Ontario N2L 3G1, CANADA.

Address Unknown: James Tetazoo is apparently no longer at the address given in issue #1, but his new address is unknown to me.

Leonard R. Weisberg (alias Fran Simon), who disqualified himself from membership (see issue #2), has donated $50.00 to the society, so I am putting him on the mailing list. His address is the same as that reported for Fran Simon in issue #1. Mr. Weisberg says that he now works for Honeywell but formerly worked for the Pentagon "responsible for most of the electronic technology in the military."

Richard May (463 Beacon Street, Boston, MA 02115), who missed qualifying for membership by 2 points on his first try and by one point on his second try but who has one of the very few perfect scores on the verbal analogies part of the Mega Test, is also on the mailing list as a non-member subscriber until such time as he can qualify by means of some other test.

I am having "Titanic" printed on both sides of each page to cut down on weight. Eventually I may go to photoreductions in order to save further on weight, thus permitting longer issues within a one-ounce weight limit.

Letter to the Editor

April 17, 1986

Eric Hart
Box 813
Miller Pl., NY 11764

Dear Ron,

In response to your letter of April 1, feel free to print the autobiographical sketch I sent you. It doesn't seem to contain much in the way of sensitive material.

Unfortunately, the logical thesis to which it refers will not admit a single-page explanation... but I might be able to convey roughly what such a thesis would address.

Logicomathematical problems have been ranked in terms of complexity, the most complex being granted the dubious distinction of "intractability". This means that the maximum time required to produce an exact solution rises as a nonpolynomial (i.e. exponential) function of the number of variables, whence problems of this type are said to comprise the class NP (the actual derivation is from "nondeterministic polynomial"; NP-class problems, which are in principle amenable to solution by guesswork, are thus solvable by a nondeterministic ("oracular") Turing machine in polynomial time, given a little luck). A few notable examples involve graph colorabilty, graph hamiltonianism, matching, and certain types of scheduling. Though time-efficient approximation algorithms have been devised for some of these, no general stepwise procedure for exact solution is thought to exist aside from a time-consuming examination of every possibility in turn until a solution is found. Since a vast number of known problems are of this type, the general impossibility of an efficient deterministic solution-routine would amount to a terminal crisis in the "infallible" science of mathematics. It's my contention that no such crisis exists, at least as currently-envisioned. "P = NP" means literally that the class P of deterministic polynomially-solvable problems equals (or includes) the class NP of nondeterministic polynomially-solvable problems - that is, that there is no intractable problem that is not a member of the small class of provably-difficult or provably-insoluable problems.

The article in OMNI mentions a combinatorial geometer who might be familiar with the subject in terms of "criticality" and an algebraist who might have some acquaintance with it from the perspective of Galois theory. Lately it's been finding more popularity in discussions of artificial intelligence.

The issue is not without philosophical interest; my own view of it suggests an interesting balance of traditions. It also suggests an efficient method for determining the "satisfiability" of any logical system, no matter how convoluted. Since most philosophical theses, however exotic, are reducible to a set of logical clauses, related techniques could be used for judgments on their syntactic and even semantic validity... and ultimately for purposes of syncretism.

Sorry to hear your entire next year will be spent typing your doctoral thesis; it must be a long one! May its promise bear you up.

(Editor's Reply: My Ph.D. dissertation will probably be finished in June or July but the oral defense is not until November or December.)

Eric Hart

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Analogy Competition

<u>MARKING FEE:-</u>   5 U.S. DOLLARS (CASH) PER ATTEMPT (£3.50 STERLI

<u>PRIZE(S):-</u>   40% OF RECEIPTS

<u>CLOSING DATE:-</u>   30 JUNE 1986

<u>SCORE, WINNERS, ANSWERS:-</u>   SENT TO ALL PARTICIPANTS AFTER CLOSING DATE

<u>TIES:-</u>   <u>FEW:-</u> PRIZE WILL BE SHARED. <u>MANY:-</u> FIRST
RECEIVED WILL WIN

<u>SEND TO:-</u>   DR. P. POMFRIT, 22, MOAT HALL AVE., PEEL
GREEN, ECCLES, MANCHESTER. M30 7LR, ENGLAND.

1)	STATIONARY BODIES	: STATICS	::	PERMUTATIONS/COMBINATIONS	:? (10)
2)	MALE	: FEMALE	::	MAC	:? (3)
3)	3	: 1	::	PIPE	:? (6)
4)	LONDON	: PARIS	::	STOCK-EXCHANGE	:? (6)
5)	SERGEANT	: MAJOR	::	SUBTILTIE	:? (9)
6)	$\sqrt{2}$	: Pi	::	IRRATIONAL	:? (14)
7)	CAMBRIDGE	: OXFORD	::	LITTLE - GO	:? (11)
8)	5	: 6	::	APATITE	:? (10)
9)	FRANCE	: PORTUGAL	::	LUTETIA	:? (11)
10)	2621	: 2118	::	HAVEN	:? (4)
11)	WHALES	: CETOLOGY	::	VOTING/ELECTION TRENDS	:? (10)
12)	SEA	: LAKE	::	TIDE	:? (6)
13)	COW	: CALF	::	EWE	:? (6)
14)	516	: 500	::	PRINTERS	:? (9)
15)	HERMES	: BACCHUS	::	CADUCEUS	:? (7)
16)	2	: 1	::	DIESIS	:? (6)
17)	JEWISH	: MOSLEM	::	VE - ADAR	:? (8)
18)	PLUS 30	: DEA-	::	MINUS 30	:? (5)
19)	SAW	: SERRI-	::	PRUNING KNIFE	:? (6)
20)	ELEPHANT	: CAMEL	::	HOWDAH	:? (7)
21)	MILK	: PEACH	::	SPURGE	:? (6)
22)	$y^2 = 4ax$	: PAROBOLA	::	$x^2 y = 4a^2 (2a-y)$	:? (5)
23)	E.S.P. CARDS	: ZENER	::	INK - BLOTS	:? (9)
24)	CROWN FOR KING	: METONYMY	::	BLADE FOR SWORD	:? (10)
25)	2	: $1\frac{1}{2}$	::	SYSTYLE	:? (10)
26)	SOIL	: LAVA	::	SOLIFLUXION	:? (6)
27)	FIRMAMENT	: INDRA	::	FORESIGHT	:? (6)
28)	WHOLE	: INDIVIDUAL	::	VERNATION	:? (6)
29)	PARSLEY	: HEMLOCK	::	GOLD	:? (7)
30)	BIRDS	: SCARECROW	::	DEER	:? (6)

SET OF 5 I.Q. TESTS: £4 STERLING OR $7 (CASH)

Trial Test "A"

Ronald K. Hoeflin
P. O. Box 7430
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This test was published in the April-May issue of the Triple Nine Society's journal, <u>Vidya</u>, which I edit. I will usually refrain from publishing material in <u>Titanic</u> that I am also publishing in <u>Vidya</u>, but tests are one major exception to this rule. I am particularly interested in responses from Titan members in order to verify my own answers, especially for the spatial problems. Please try to submit your answers by July 1, 1986. I will try to send score reports by July 15, 1986. No revised answers or second attempts are allowed, so be as accurate as you can on the first try. Your name, address, and optionally any previous IQ and general aptitude test scores should be supplied, including your raw score on my Mega Test, which will spare me the toil of looking it up. My score report will show how your score ranks in comparison with that of other Triple Nine and Titan participants.

Verbal Analogies

Write the word or prefix that best completes each analogy. Verbal problems count one point each (non-verbal problems: two points each). Use reference aids. Misspellings will be counted wrong. Final spelling authority: <u>Webster's Ninth New Collegiate Dictionary</u>.

1. Move about : Motile :: Stay put :   ?
2. Japanese : Diet :: Israeli :   ?
3. Light : Photoelectric :: Pressure :   ?
4. Sum : Sigma :: Product :   ?
5. Juliet : Romeo :: Hero :   ?
6. Memory : Amnesia :: Speech :   ?
7. Tire : Retread :: Parchment :   ?
8. Eye : Ophthalmo- :: Navel :   ?
9. Cattle ranch : Brand :: Book publishing house :   ?
10. 10 : Decimal :: 60 :   ?
11. All is one : Monism :: All is self :   ?
12. Rotating : Helicopter :: Flapping :   ?
13. Christian : Crusade :: Moslem :   ?
14. Pebble : Ripple :: Earthquake :   ?
15. One by one in succession : Seriatim :: Here and there throughout :   ?
16. Fish : Mermaid :: Vulture :   ?
17. Thought : Obsessive :: Action :   ?
18. Celebrity : Sycophantic :: Wife :   ?
19. Easy job : Sinecure :: Guiding light :   ?
20. Sweet<u>ness</u> : Suffix :: Boat<u>swain</u> :   ?
21. Emperor : Jones :: Great God :   ?
22. Gold : Malleable :: Chalk :   ?
23. The universe : Cosmological :: Universal laws :   ?
24. Cannibal : Anthropophagy :: Werewolf :   ?

Number Series

Write the number which best continues each of the following series, "best" meaning based on the simplest possible algorithm that successfully generates the numbers given in each series.

25.	2	7	23	53	97	151	227	?
26.	5	3	5	6	2	9	5	1	4	1	?
27.	1	4	17	54	145	368	945	?
28.	2	15	1,001	215,441	?
29.	7	8	5	3	9	8	1	6	3	?
30.	0	6	21	40	5	-504	?

Spatial Problems

When two or more spatial figures interpenetrate, they may divide one another into a number of smaller pieces. For each of the following problems, find the maximum number of pieces that can be produced by the particular combination of figures indicated, counting only pieces that are not further subdivided. For interpenetrating two-dimensional figures, the pieces are bounded surfaces. For interpenetrating three-dimensional figures, the pieces are bounded volumes. For combinations of two- and three-dimensional figures, you are to consider the pieces that are bounded volumes. Illustrated below are three interpenetrating circles, yielding seven pieces. You may freely vary the size of figures to produce the maximum number of pieces.
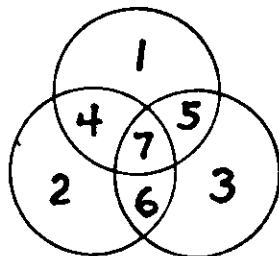
31. Three circles and two triangles.

32. One tetrahedron and one cube.

33. One tetrahedron and four spheres.

34. Two right circular cones and one torus.

35. Two right circular cones and one right circular cylinder.

36. One torus and three Möbius strips, each Möbius strip confined to and encircling the interior of the torus and each having a 180° twist that is evenly distributed along its length.

END OF TEST