

Kingston, Ontario K7L 3N6

QUEEN'S MATHEMATICAL COMMUNICATOR

October 1985

Scheduling a Golf Tournament	1
High School Math Seminars	6
The Coleman Symposium	7
Recent Appointments	8
Statistics News	8

1

News

Editor: Peter Taylor. Address all correspondence to: [redacted]

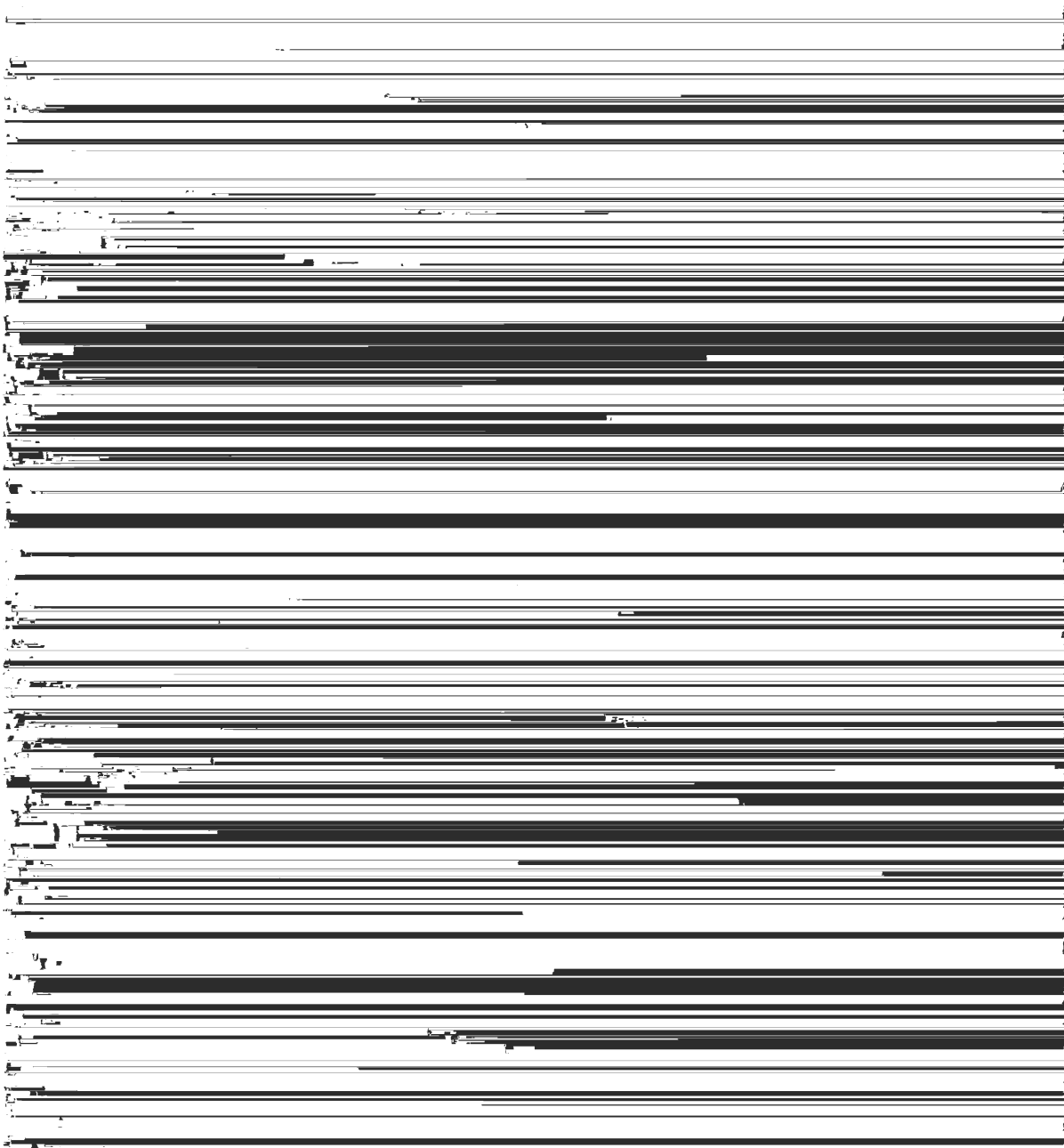
[redacted]

**"Scheduling A Golf Tournament:
An Application Of Finite Geometry"**

by Norman J. Pullman

In September 1983 a local printer telephoned the Department for help with a problem.

He and 15 friends were about to spend a week at a resort. They



(b) All v players compete in each round; each player in precisely

one game each round.

(c) Enough rounds are scheduled so that each contestant competes against every other contestant exactly once during the

tournament.

Suppose a round-robin tournament can be scheduled. Let the number of

rounds be y and the number of games per round be x . Conditions (a), (b) and (c) imply that $v = kx$ and $\binom{v}{2} = \binom{k}{2}xy$. Therefore

$$kx - (k-1)y = 1.$$

The solutions to that equation consist of all pairs of integers (x, y)

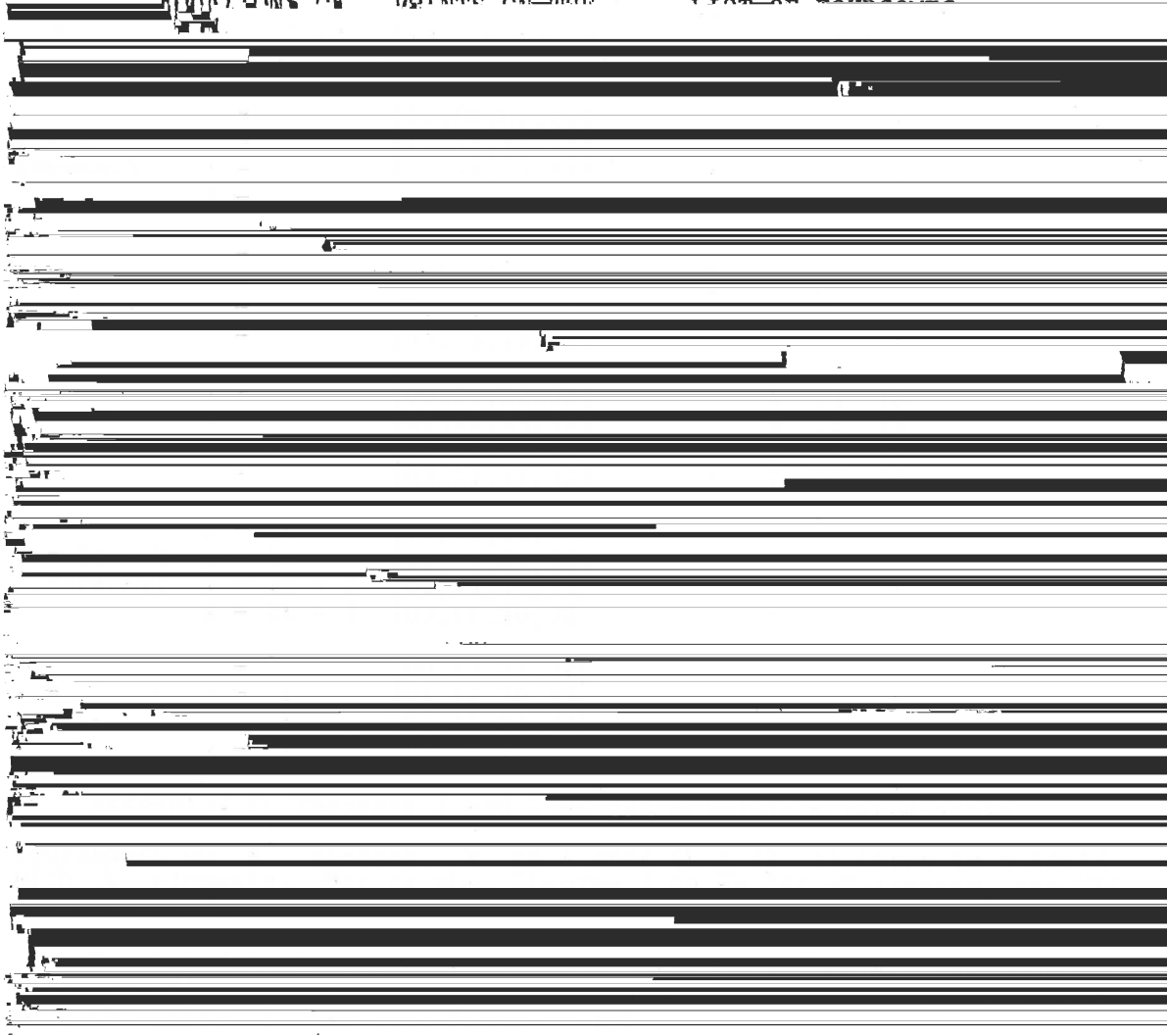
Here is a general framework for the [redacted]

[The remainder of the page is heavily redacted with horizontal black bars, obscuring the text.]

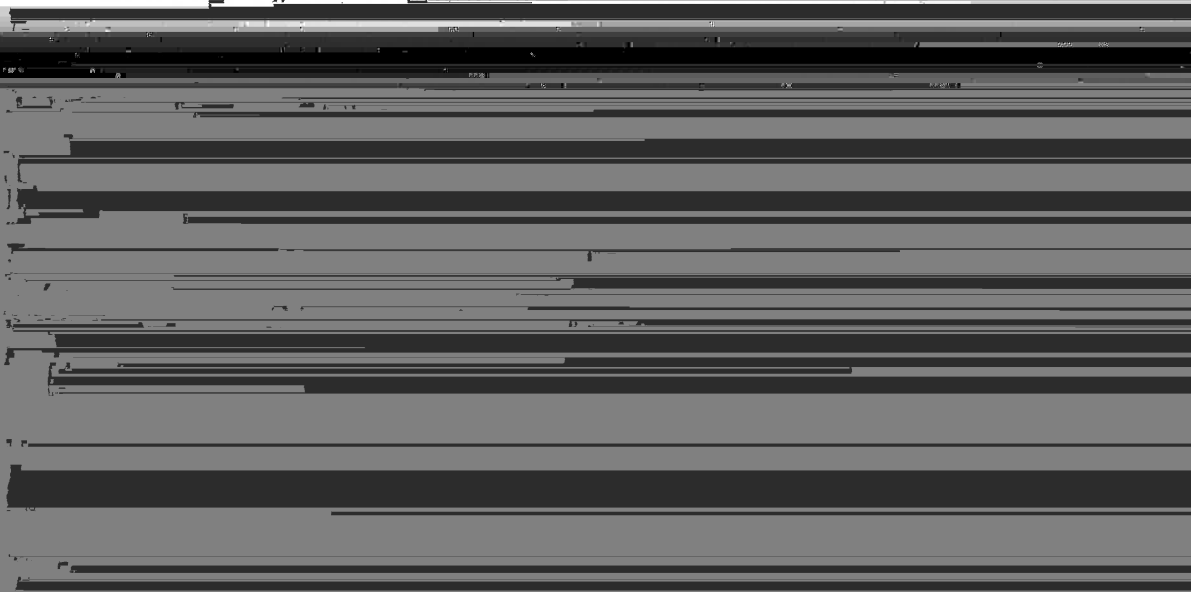
When a pair of lines have no points in common they are said to be parallel. As you can see, the points in a round-robin tournament

can verify that a round-robin tournament schedule for $v = k^2$ contestants ("points"), k players per game ("lines") is an affine plane. A "round"

RELATIONS OF POINTS ON THE LINE OF POINTS



$x = 0$ [00.01 02.03] 1 2 3 4



To this day, no one has constructed an affine plane of order 10 or shown that it cannot exist, although many people have worked on this

The Coleman Symposium by Bob Erdahl

In late August Queen's Mathematics and Chemistry Departments hosted an international conference on reduced density matrix and density functional theory. Seventy participants from over 15 different countries came to honour John Coleman for his contributions to the field of

matrix theory, one of the two inter-related topics of the Symposium. He formulated and studied some of the difficult mathematical problems associated with this theory.

The Conference was of interest to theoretical chemists, physicists and mathematicians who specialized in the field of

Recent Appointments

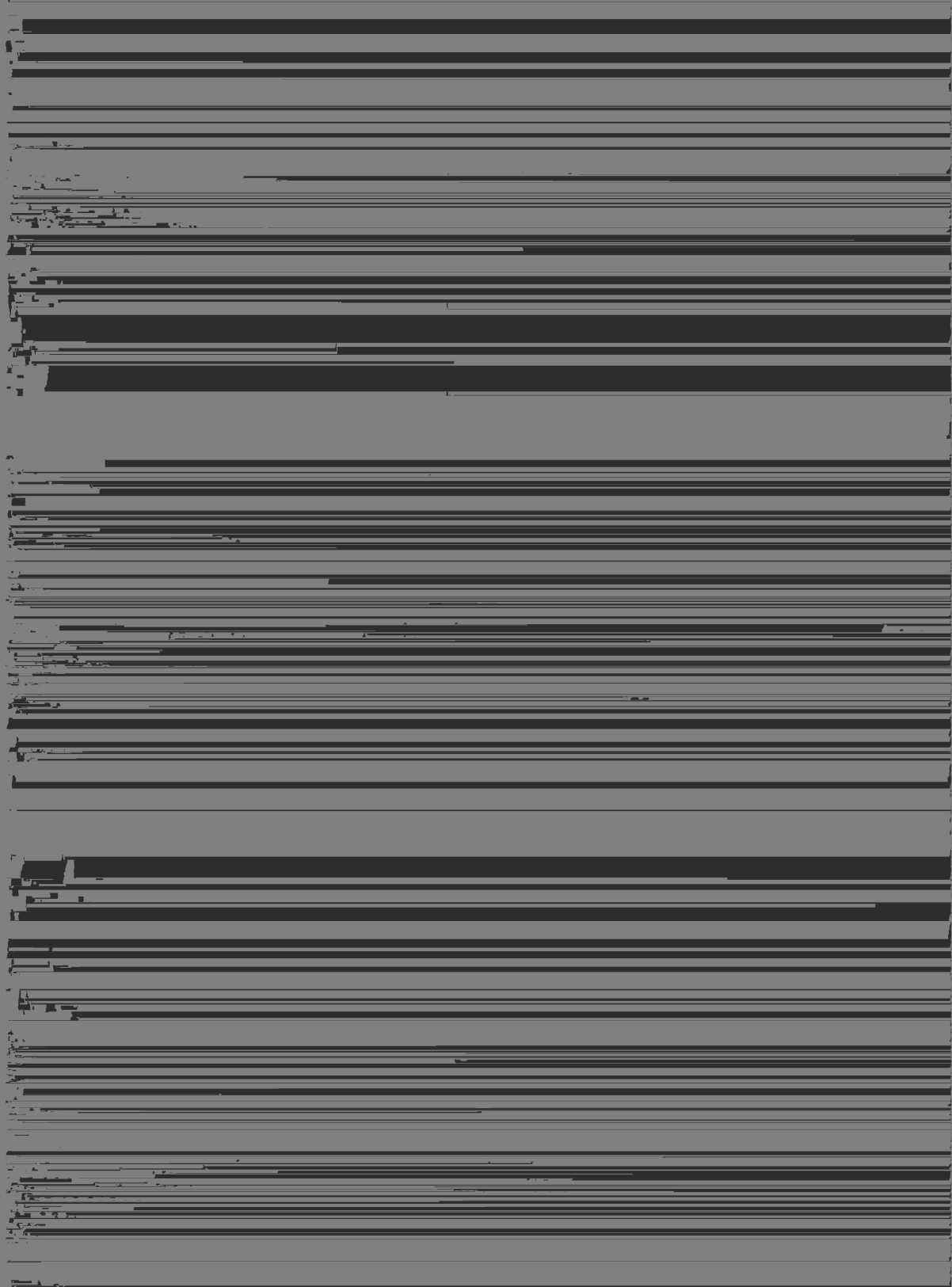
David Pickard, a Harvard statistician has just been appointed to the Department of Mathematics and Statistics at Queen's. David obtained his

Algorithms
by Mike Swain

The study of algorithms is part of computer science and is



are quite different in their approach. One involves noticing that $\text{sum}(I, N) = \text{sum}(I, N-1) + X(N)$. An $O(N^2)$ solution that takes



Concerning applications of computers are of the biggest uses of

[REDACTED]

News

From Don Watts

I had a most enjoyable and stimulating 8 months leave of absence at

[REDACTED]

From Robin Giles

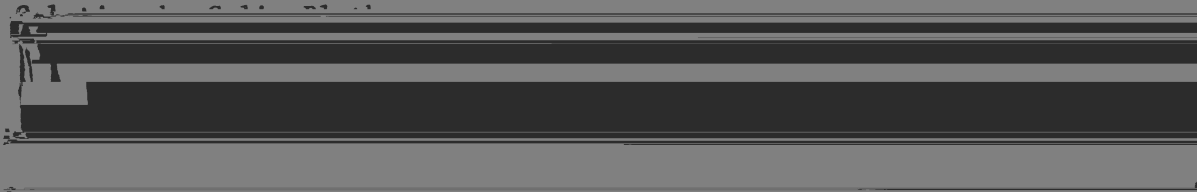
I gave an invited talk on "The concept of grade of membership" and chaired a session on the same general topic at the First I.F.S.A. Congress (IFSA = International Fuzzy Sets Association) in Madrid, Spain.



Solutions to Problems of January 1985



In the regular tetrahedron $ABCD$ and pyramid $EFGHI$ shown above, all faces except $FGHI$ are equilateral triangles of equal size. If face ABC were glued congruently to face EHI , how many faces would the resulting solid have? (Colin Blyth)



For this question, Educational Testing Service overlooked the



Problem 2 Find the next term in this sequence.

$$(x+y)^5 = x^5 + y^5 + 5xy(x+y)(x^2+xy+y^2)^1$$

$$(x+y)^7 = x^7 + y^7 + 7xy(x+y)(x^2+xy+y^2)^2 .$$

(Peter Taylor and Doug Dillon.)

Solution by Peter Taylor

I guess one way to state the problem is to ask for what p the equation

$$x^p + y^p = p(xy)^{p-1} + (x+y)(x^2+xy+y^2)^{p-2}$$

there are probably some clever things to do

