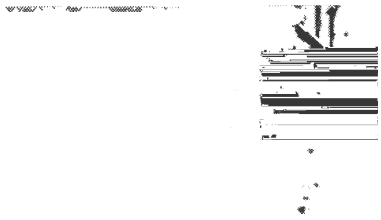


QUEEN'S PUTNAM TEAM

An aperiodical issued at Kingston, Ontario by the
Department of Mathematics and Statistics, Queen's University
Kingston, Ontario K7L 3N6

June 1984

Professor Paulo Ribenboim of
the Department of Mathematics and

$$z = a^2+b^2$$

is a solution and all solutions are of this form.

Diophantus of Alexandria (250 AD) considered similar [illegible]

translated Diophantus into French.

Now I come to Pierre de Fermat (1601-1665), Conseiller à la Cour de

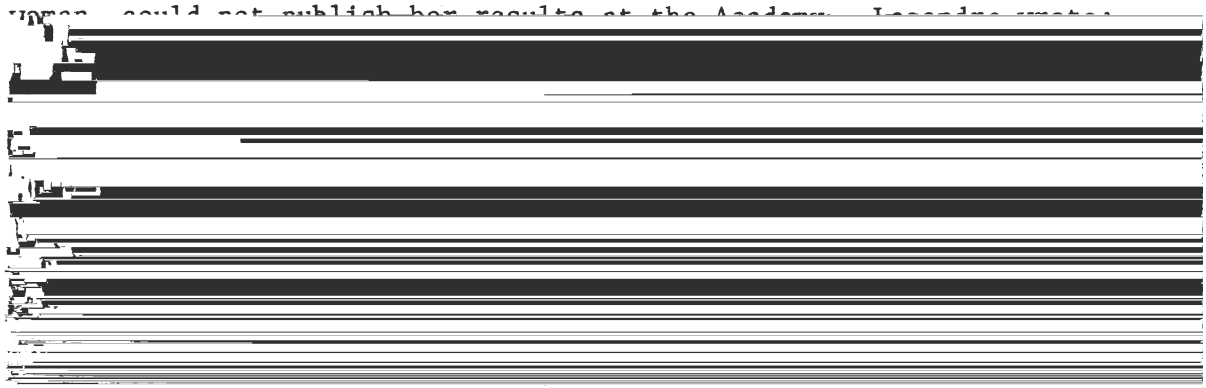
Later Fermat proposed as a problem his assertion about cubes and biquadrates. This problem (for all $n>4$) is still open after 347 years. Fermat wrote a proof for biquadrates, but did not write a proof for cubes and

never again mentioned the statement for $n>4$. This assertion of his has been called "Fermat's Last Theorem" since all the assertions of Fermat (except the one on Fermat numbers) have been settled. This is the last one.

(2) Sizin u. the difficult involved

Suppose we are given the exponent $n>2$. First, I point out that we cannot write up all the nth powers of integers and add them up two by two and see whether we get an nth power. That is a never-ending procedure, which also has to be repeated for all other n. So we must proceed by contradiction. Assume there are hypothetical numbers $x, y, z>0$ for which $x^n+y^n = z^n$. From this hypothesis, derive by purely logical considerations some consequences which may be shown to be absurd - by contradicting some known fact. Sometimes we can derive consequences which

calibre, Sophie Germain (early 1800's), alias Monsieur le Blanc. She maintained correspondence with Gauss and Legendre, but, because she was a [redacted]



"Sophie Germain, with a very ingenious new method, proved in a 'trait de plume', the 1st case of Fermat's Last Theorem for all exponents $p<100$. By way of explanation, Fermat's Last Theorem had come to be divided into [redacted]

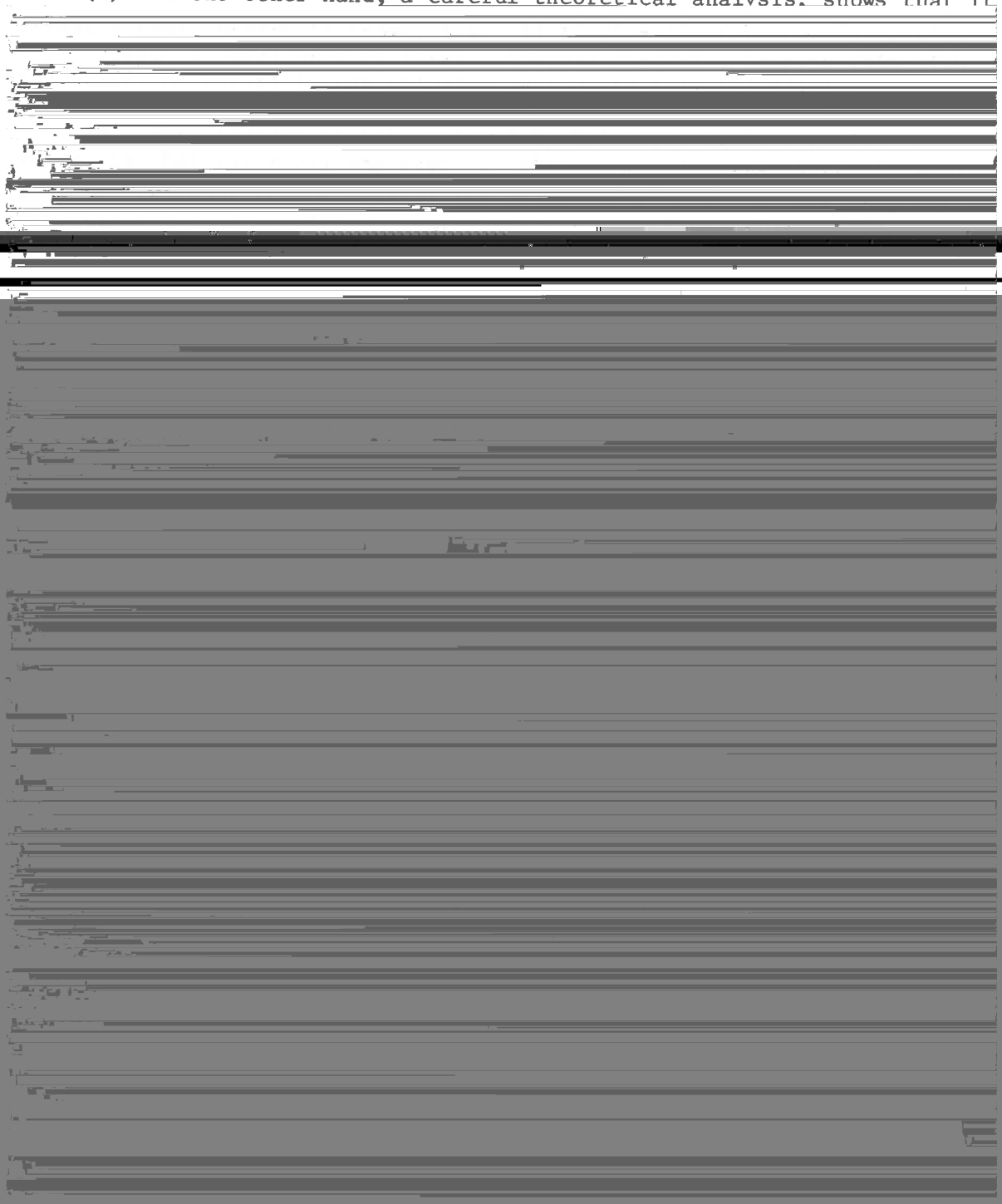
the cyclotomic integers to be, in unique way, products of prime cyclotomic

To rectify the situation, Kummer had the striking idea of introducing "ideal numbers". There is an interesting comparison here with chemistry

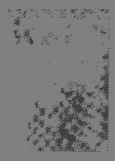
radical", and ideal numbers correspond to the element "fluoride"

(b) With other criteria using Bernoulli numbers (from probability theory), Vandiver found a criterion which could be tested by computer. After a year of calculation on a monster IBM, Wagstaff obtained the result that Fermat's Last Theorem holds for all $p<125000$.

(c) On the other hand, a careful theoretical analysis shows that if



Robert Richard Dingle Kemp (1932 - 1984)



Professor Robert Kemp of the Department of Mathematics and Statistics

Doctor Kemp was awarded the Bachelor of Arts degree

Adelaide hall - Symbols in Stone

How many have cast their eyes up when entering or passing by Adelaide Hall and seen the inscription

[redacted]

At the time Adelaide Hall was begun (1951) the Dean of Women at Queen's was **Dr. A. Vibert Douglas,** now Emeritus Professor in the Department of Mathematics and Statistics. Let me quote from an article written by Dr. Douglas in 1961 [redacted]

[redacted]

'When plans for the extension to Ban Righ Hall were nearing completion it became apparent from the architect's drawings that five large rectangular and five smaller square stones were to be carved and placed above the first and second bay windows immediately over the arch of the entrance at the corner of University and Stuart Streets. Instead of conventional geometric

[redacted]

Two New Positions for the Department

Since 1972 Queen's University has been pursuing a conservative policy

with respect to hiring new faculty. This is part of the university's larger

decision to maintain enrolment at a fixed level of about 11,000 students. The Department of Mathematics and Statistics has experienced some decline in

January and the early retirement of Professor Caradus (to take up full time

News

Professor **Tony Geramita** was invited to spend a week at Bucknell University, Lewisburg, Pennsylvania, as a Distinguished Visiting Professor. He was there from April 8 - 14, gave 2 lectures on the area of his research, and consulted on an informal basis with members of staff.

The Kakeya-Besicovitch Needle Problem.

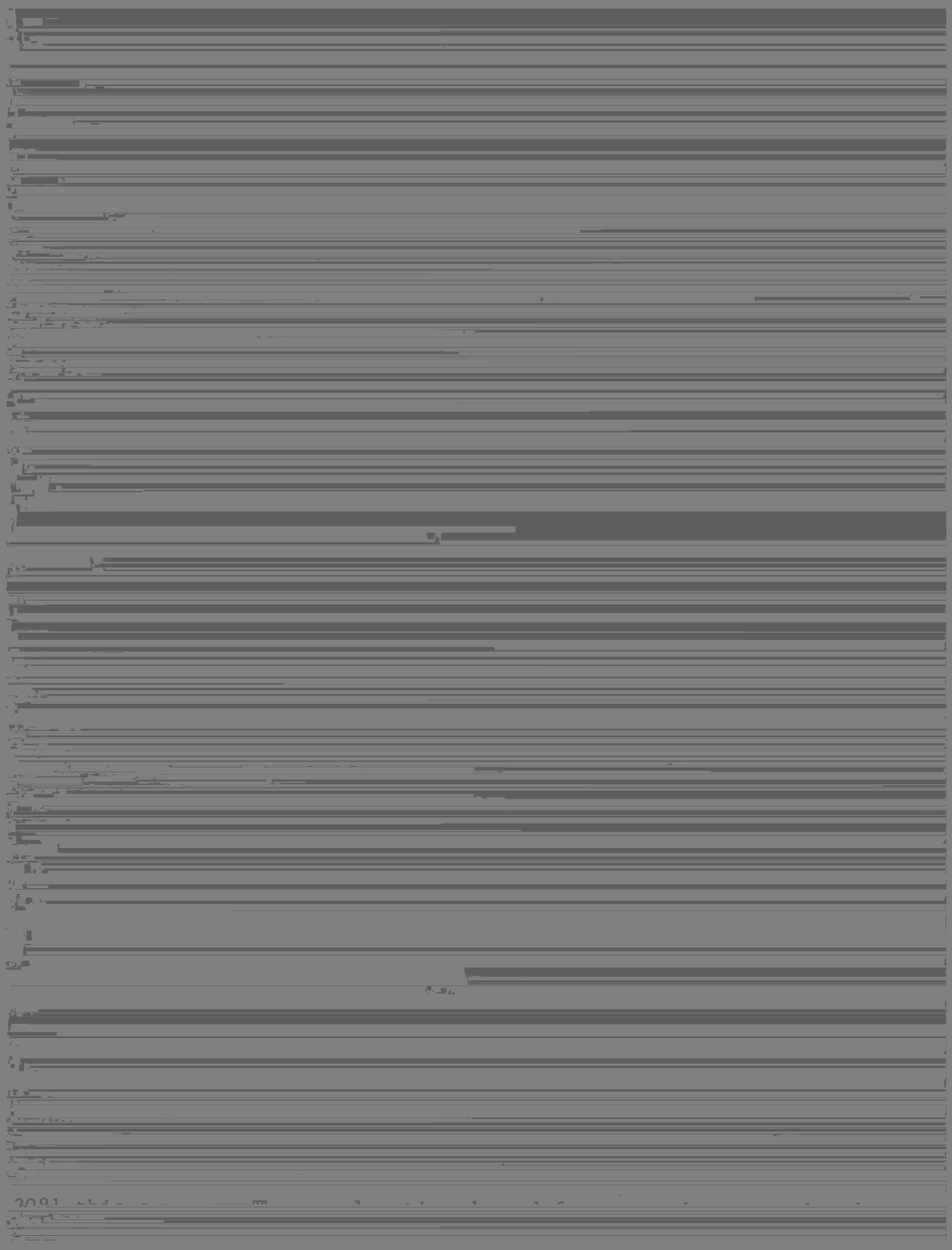
The problem concerns subsets S of the plane in which a needle of unit length can be rotated through 180°. For example S could be taken to be

problem is to find such a set S with minimum area.

A rather interesting example of an S is what is called the

Microcomputers for Queen's Engineering

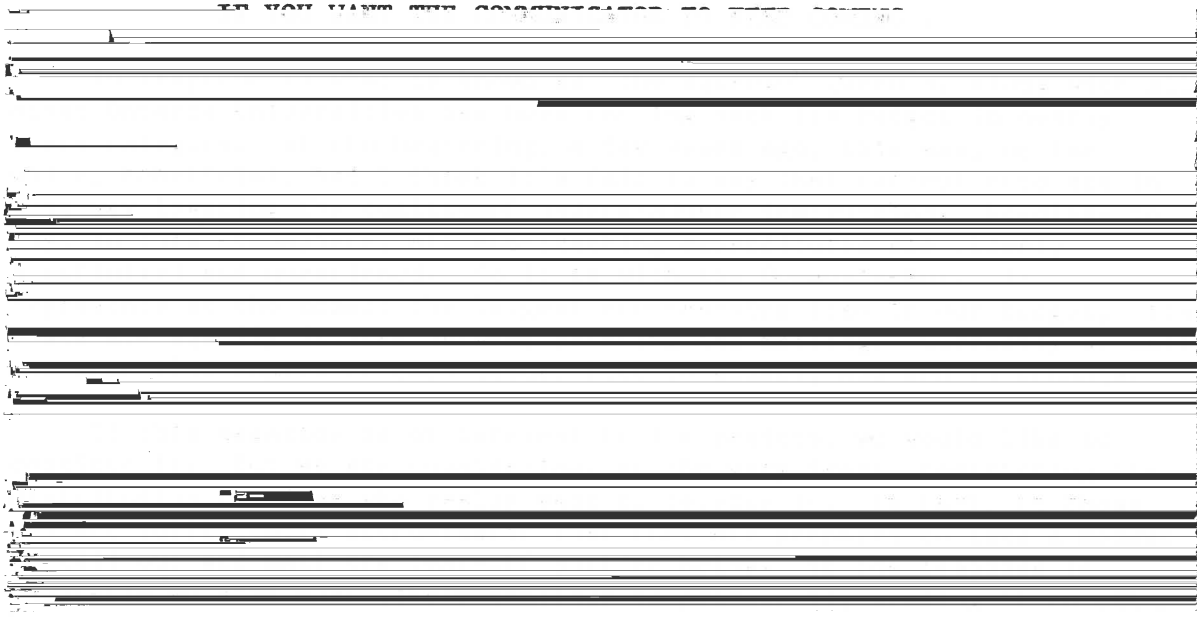
The computing facilities at Queen's have been evolving for over 20 years. In 1961, Queen's first "mainframe" computer -- an IBM 1620 -- was installed in Ellis Hall. This computer has since been replaced by seven



explore the capabilities of a microcomputer through less formal and per-

Important message on back.
Detach and mail to:

The Communicator
Department of Mathematics and Statistics



In response to what is known as "the squeeze" Queen's, along with all other Ontario Universities has been cutting back its budget in nearly

Name and Address Correction (if any)

Comments