

NEWSLETTER

Department of Mathematics & Statistics

Issue No. 17/03

Friday, 19 September 2003

This Week:

BOOK REVIEW.	1
DEPARTMENTAL RESEARCH FUNDS	1
DEPARTMENTAL VISITORS	2
MATH QUESTION	2

BOOK REVIEW.

The other day I was looking on the shelves of the Physical Sciences Library when I came across 'Indiscrete Thoughts' by Gian-Carlo Rota. As he is a combinatorist (but a different substream from me) I glanced at it and saw enough to lead me to borrow it. Having read it, I think all recipients of this newsletter could profit from reading it, especially our graduate students who may learn what they are letting themselves in for. It will help us all reflect on what we do as mathematicians.

This is not an autobiography: we learn only such matters about the author as are essential for his story. We read hardly more about his personal researches. This is a collection of semi-independent writings which add up to a reflection on mathematics and mathematicians in the author's time and place (from 1953, Princeton, Yale and elsewhere). He puts forcefully strongly-held views, though the epilogue by his editor suggests that he is not always entirely serious.

The book opens with accounts of mathematicians: some I had never heard of, some were well-known names, and one or two I have even met. He makes the point that good mathematicians are not necessarily good people and many of the best were decidedly odd in their behaviour.

There are reflections on the process of doing mathematics, pointing out that the actual course of discovery is far from what outsiders tend to assume. We do not start out from axioms and work in all possible directions: we start from a result which we believe ought to be true and

look for a way to connect it to known results. The first proof is often awkward and not infrequently wrong, but it is improved on by removing irrelevancies. The axiomatic method is excellent for collecting results, but it is not sufficient for teaching. He is hard on writers who so compress their work that they give no examples or motivation nor place their work in context. Reading them becomes an exercise in cryptography.

A good deal of the book is spent on philosophy. He has little respect for modern philosophers who have been misled into thinking that the mathematical style and standard of proof is the only sort there is and so have shunned their proper realms of investigation where such proofs are not to be had. He promotes the approach of 'phenomenology' which accepts and records things the way they are with their uncertainties and contradictions, rather than being concerned with the way they 'should' be.

If you do no more than glance at the book in the stacks, read 'Ten lessons I wish I had been taught' and 'Ten lessons for the survival of a mathematics department'.

You do not need to accept everything Rota says, but the book is well written and raises issues which are well worth thinking about.

David Robinson

DEPARTMENTAL RESEARCH FUNDS

Peter Renaud to attend the Delta conference in Queenstown in November.

Qui Bui

DEPARTMENTAL VISITORS

<u>Current Visitors</u>	<u>Organisation</u>	<u>Room No.</u>	<u>Ext. No.</u>	<u>From</u>	<u>To</u>
Assoc. Prof. Peter Lockhart	Massey University	616	8876	6-Oct-03	20-Oct-04
Richard Laugesen , Prof	University of Illinois	710	7694	14-Jul-03	31-Mar-04
Gyou-Bong Lee , Prof	Paichai University, Korea	502	7663	15-Jul-03	14-Jul-04
Adrian lordache , Mr	University of Illinois	522	7695	1-Aug-03	31-Apr-04
Burkard Polster , Dr	Monash University	602	7687	15-Sep-03	20-Sep-03

MATH QUESTION

Teaching Math in 1950:
A logger sells a truckload of lumber for \$100.
His cost of production is $\frac{4}{5}$ of the price.
What is his profit?

Teaching Math in 1960:
A logger sells a truckload of lumber for \$100.
His cost of production is $\frac{4}{5}$ of the price, or \$80.
What is his profit?

Teaching Math in 1970:
A logger exchanges a set "L" of lumber for a set "M" of money. The cardinality of set "M" is 100. Each element is worth one dollar. Make 100 dots representing the elements of the set "M." The set "C", the cost of production contains 20 fewer points than set "M" Represent the set "C" as a subset of set "M" and answer the following question:
What is the cardinality of the set "P" of profits?

Teaching Math in 1980:
A logger sells a truckload of lumber for \$100.
His cost of production is \$80 and his profit

is \$20.
Your assignment: Underline the number 20.

Teaching Math in 1990:
By cutting down beautiful forest trees, the logger makes \$20.
What do you think of this way of making a living?
Topic for class participation after answering the question:
How did the forest birds and squirrels feel as the logger cut down the trees?
There are no wrong answers.

Teaching Math in 2000:
A logger sells a truckload of lumber for \$100.
His cost of production is \$120.
Show how Arthur Andersen determines that his profit margin is \$60?
Teaching Math in 2020:
A logger sells a truckload of artificial lumber for \$1000
His cost of recycling trash is \$100
Show the effect a barren earth has on profit margin.
Teaching Math in 3000:
A.....?

Molly