## On the cooperation of the 20th century mathemations and another topics.

TAKESHI KANO	n. 1 as
Prologue	·
One of the reasons to write this paper, 1	s an
NHK'S TV talk by Prof. S. YAMANAKA	who
received the Nobel Physiology prize because	he tound
the I-5 cell, where he said " Japanese scient	ists
must be more international and shall ex	tend
to coopeate with many foreign scientists. 1	3ut
unfortunately, almost Japanese scientists h	ave no
sufficient ability to speak and hear fores	8 7
language, ospecially English. This fact is	the
most weak point. " I also realize th	is fact
because since 1971 I visited many	foreign
countries e.g. Soviet Union (non Russia	). China
England, German, France and USA, etc.	An and Black (Ch.C.); At 1/1/2 from American in Assessment and American destroyed A * Corp. C
Through such experiences I learned t	he true
speaking - English was quite different from	that of
Japanese English. For an example, L'first	learned

	These facts necessarily show the exclusive edu-
. " (***)	cation of Japanese elementary level. I would like to
	indicate later such facts that come from ignorance
•	and mis understanding in most cases.
* #1 al	All
	Chapter I
Tomalon reserve	In this chapter, I introduce first the famous
	Book " The Scattich P. 1"
	Malla Malla
	Book " The Scottish Book" (Mathematematics  from the Scottish Cafe) Edited 1 2 2
and a second	from the Scotlish Cafe) Edited by R. D. Mauldin.
	from the Scotlish Cafe) Edited by R. D. Mauldin.  Birkhäuser, Boston. Basel. Stattgart. 1981 in  Birkhäuser Boston. The picture of the Café is still

***************************************	W 3
CONTRACTOR OF THE PROPERTY OF	In "Ancdotal History of the Scottish Book",
	S. Ulam says as following: Most of the
russingly, in contrast, page parties, notes a parties,	problems are one to a few local mathematicians,
and the second of the second	myself included. Actually, many of the eaglier
	problems originated well before 1935 - perhaps
neller invester om, vinska passe myles avskare, s	6 0 7 years before - during the period whom
1999 Z	I was still a student I was then
and the second seco	able to take part in the informal discussions
	- generally among two or three of us at a time
	- which were a standard feature of math-
a control of the cont	ematical life in pre-world war I Lwów.
	ultimitaly M. Kac made his appearance,
	and I lost my position to him, my join by
	some five years. The story of the Scottish
100 to 100 to 100 to 100 to	Book could also be called the "Tale of Two
	Coffee Houses", the Cafe Roma and, right
***************************************	next to it, the Café Szkocka or Scottish Café.
e de la company de la comp	The meetings were usully held on Saturday
10. MMM	in a seminar room at the University—honce
The second secon	close to the Cafés. The time could be either
	afternoon or evening but the really
	fruitful discussinons took place at the
en a gaggamana e	Café Roma after the meeting was officially
	OVEC.

such as Mazur, Orlicz	et.cet
and the second second second control of the	Birlights Villema 1876 - 4 March March March and Color of the Color of
8. (Mazur, prize: five	small beers)
(a) Is every series	summable by the first
representable as a	Cauchy product of two
converging series	or also, equivallantally,
	each convergent sequences
_	t saquences (xn), (ym)
such that	
$z_n = \frac{x_0 y_n + y_0}{y_n}$	1. t. : + 10 n y 1
71	
13. (Ulam) Let be the	class of all subsets of
the set of integers. Two	Subsets K1, K2 E E
are called equivalent or	
and Kz-K1 are at m	
is given a function F	
KEE; its range is	
$F(K_1 + K_1) = F(k_1 + K_2)$	
	e. F(K).
·	e exist a function f(x)
(x and f(x) natural integ	
	k) ?
T.M.S.	the Armonia for the armonia of the second of

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14. (Schander,	Mazur)	
Let f(x1,	-, fn) be a function	defined in
the cube Kr		n de filos de antificación de la filosoficia del filosoficia de la filosoficia de la filosoficia de la filosoficia del filosoficia de la f
	ose that f possees alm	and or one
where all	the partial derivatives	At WAY
ال مداد مده	Id da 'a la	up to the 7th
grair and	the derivatives up to th	e order(r-1)
	tely continuous on almo	
<u>straight</u>	line parallel to any	axis.
	tial derivatives cup to +	
€ L+, p>1		ti entre en
	The second secon	e de la companya de l
A. P.	exist a sequence of po	ynomials (wi)
	verge in the mean in-	
to f and in c	all partial derivatives u	p to the
order r?	For r=1 this was	Settled
	by the authors. An an	
problem ax	ists for domains other	is those to
28. (Mazur; pr	ize: Bottle of wine )	Fine grant 12 42.
Lat	The state of the s	All more than the second substitution of the second
(m) \(\sigma\) an	and the community of the second section of the community of the second section of the section of the second section of the section of the second section of the section of the second section of the section of the second section of the	***
M == 4	the state of the s	to the second of the second
be a seri	es of terms and let us	denote by R
the set of	all numbers a for which	there exists to
a. Is it	true that if the set R	contains more
than and	number but not all nuber	- de a

165. (Ulam; prize: two bottles of wine)
Let be a sequence of vational points in the
n-dimentional unit sphare. The first N
points p pN are transformed on N points
(a) so located in the same sthere) 81, & N all
different. We detine a transformation on the
points pn, n > N, by induction as follows:
Assume that the transformation is defined for
all points pu (v <n), and="" are<="" images="" td="" their=""></n),>
all different. This mapping has a certain
Lipschitz constant Ln-1. We denote the in-
verse mapping by L'n-1. We define the mapping
at the point p, so that the sum of the constants
Ln+ L'n should be minimum. (In the cass
where we have several points satisfying this
postulate we select one of them arbiturarily)
Question: Is the sequence {Ln + L'a} -
bounded?
The state of the s

120 (0)	liczi	₩ \$ \$P\$ :
-many	t xint be a sequence of p	owers with
integer	exponents on the in the i	nterval (a, b)
and	an est de circio en el como en el Como es en redesigna restruirada ence espera delibração ence describa de transcriba en encesa en	er glann der strangen aus gegen und den han den verden geste 1884 bekannen mengen er
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Given	r an example of a trigonomet	ric series
go the delighter that a specific point of the control	2 (ancosnx + bn sinn:	
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avery	where divergent and such th	at
et a la la trada especial de la lacción de la compansión de la compansión de la compansión de la compansión de	$\sum_{n=1}^{\infty} (a_n^{2+\epsilon} + b_n^{2+\epsilon}) < +$	CO
for a	ny E > 0.	
151 ( Wave	E: Prize: "fondue" in Genova	" )
	there exist a Ratmonic funct	
	which contains a cube in	
	vanishes on all the edges	
	xoes not consider f = 0.	
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## COMMENT BY A - ZYGMUND The origin and history of the Scottish Book is described by Prof. Wlam in his own lecture and I could not add much here The book is a product of one of the methematical schools in Poland, that of Lwow, while I myself, born and educated in Warsaw, belonged to what was then known, both in Poland and abroad, as the Warsaw mathematical school. There was a close collaboration between individuals of both schools, and though my personal contact with Lwow was rather loose, I was very much interested in the work going on my work. The school of Lwow is technically no longer in existence and its organ Studia Mathematica. began in 1932, is now being published in Warsaw. But the influence of the work of its founders and their pupils confinues and grows in various Polish mathematical centers. The names, of Banach, Steinhaus, Schauder, Kaczmarz, Anerbach, Ulam, Mazur, Orlicz, Nikliborc, Schreier, Ruziewicz, Kac, and others symbolize achievements of this school.

mathematical problem book entitled as	. Mile angenyage
"Hungarian Problem Book"	
which is based on the Eötvös Competitions,	~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~
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by J. Kurschak : published by Random House	
and The L. W. Singer Company; New York, Syrace	rze.
copyright, 1963, by Tale University)	
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"The Scottish Book". Now I would like	مرور مساعد ماد
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We are grateful to Professors Hajós Neukomm	+
and Surányi.	
(† Prot. Neukomm died in 1957)	

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	in two volumes. If these turn
·	ful as we hope, we shall probably
	blems from 1929 to date as well.
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the solutions prs	ented here together with some of
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that he (and she	same reason ) is being taught.
TO STATE OF THE PROPERTY OF TH	New York 1962

-	Values of x and y
<u> </u>	The lengths of the sides of a triangle from
	an arithmetic progression with difference d.
	The area of the triangle is t. Find the sides
	and the sides and angles of this triangle:
λ.	Solve this problem for the case d=1 and t=6.
	The second secon
	1895 Competition
<1>>	Prove that there are 2 (2"-1) ways of
·	dealing n cards to two persons (The players
A Martinia de La companya de La comp	may receive unaqual numbers of cards)
orden samples, alle all de septembre som sy tel per pe	1899 Competition
**************************************	
< 1>	Let x, and xe be the roots of the equation
	$x^2 - (a+d)x + (ad-bc) = 0.$

Show that $x_i^2$ and $x_i^2$ are the roots of $y^2 - (a^3 + d^3 + 3abc + 3bcd)y + (ad - bc)^2 = 0$ (2) Prove that, for any natural number $n$ ,  the expression $A = 2903^m - 803^m - 464^m + 261^m$ is divisible by 1897.  (1) Prove that, for any positive integer $n$ , $1^m + 2^m + 3^m + 4^m$ is divisible by 5 14 and only if $m$ is not	
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Prove that, for any natural number n,     the expression  A = 2903 <sup>n</sup> - 803 <sup>n</sup> - 964 <sup>n</sup> + 261 <sup>n</sup> is divisible by 1897.      1901 Competion        (1) Prove that, for any positive integer n     1 <sup>n</sup> + 2 <sup>n</sup> + 3 <sup>n</sup> + 4 <sup>n</sup> is divisible by 5 14 and only if n is not	
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4.27 confliction for the fighted of Williams are more than 12.5 construction of the second control of the seco	ومناها والمفرد المدادة
(2) Let a and b be two natural numbers whose	lg P. M. P. S. Seguerra Andrews on a
greatest common divisor (8.c.d) is d. Prove	
that exactly d of the numbers	and the second s
a, 2a, 3a,, (b-1)a, ba	ではは 作品研究が下るCff 2110 別。私の人
The state of the s	- CA-V so betalenensee dy stat raged
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-	2 = sind, y = sing, there can be four different
WARE TO PRODUCE A STATE OF THE	values of $z = sin(\alpha + \beta)$ .
RANCH STATE OF THE	(2) Set up a relation between 2c, y and 2 not
	involving trigonometric functions or radicals.
<u></u>	(b) Find those pairs of values (x, y) for which
Martin and the second s	Z= sin(d+B) takes on fewer than four distinct
(Magazige-way gyo-wo-woonson-wo-wo-wo-wo-wo-wo-wo-wo-wo-wo-wo-wo-wo-	values.
Felicia III 1832 ministeriore montro fol d'Americ (1) e	1905 Competition
	1) For given positive integers n and p, find
The same of the sa	necessary and sufficient conditions for the system
and the latter to the second part of the second par	of squations
wanten make militari fallan in half dimen amayada asa	$x + by = n$ , $x + y = p^2$
About the same of a	to have a solution $(x, y, x)$ of positive
	intogers. Prove also that there is at most one
	such solution.

Mark the first through the second to the sec	~ A5~
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