DAILY NEWS 2

Puzzle with Prize:

Let $S = \{$invited speakers at IPM II$\}$

For $x \in S$ define
$A_x = $ the city of $x's$ birth
$B_x = $ the city where x got a PhD
$C_x = $ the city of $x's$ current institution.

Let T denote Tehran, and define $\rho(X, Y)$ to be the distance between the cities $X \& Y$.

Find
$$\max\{\rho(A_x, B_x) + \rho(B_x + C_x) + \rho(C_x, T) | x \in S\}$$
$$\min\{\rho(A_x, B_x) + \rho(B_x + C_x) + \rho(C_x, T) | x \in S\}.$$

The first person with the correct answers (with proof) will have their picture taken with (many of) the invited speakers.

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Collaboration Distance of Keynote Speakers of the Day

Richard M. Wilson

Jeff Dinitz

Today's Iranian Mathematical History Corner

Abu Baker Karaji[1] (circa 953--1029) knew the binomial coefficients and what is now known as Pascal's triangle some 600 years before Pascal. His description of the construction of the triangle survives in the work of the later Jewish mathematician al-Samawal (circa 1130--1180). The translation reads as follows[2]:

Al-Karaji said that in order to succeed we must place 'one' on a table and 'one' below the first 'one', move the first 'one' into a second column, add the first 'one' to the 'one' below it. Thus we obtain 'two', which we put below the transferred 'one' and we place the second 'one' below the 'two'. We have therefore 'one', 'two', and 'one'.

This shows that for every number composed of two numbers, if we multiple each of them by itself once - since the two extremes are 'one' and 'one' - and if we multiply each one by the other twice - since the intermediate term is 'two' - we obtain the square of this

If we transfer the 'one' in the second column into a third column, then add 'one' from the second column to 'two' below it, we obtain 'three' to be written under the 'one' in the third column. If we then add 'two' from the second column to ''one' below it we have 'three' which is written under the 'three', then we write 'one' under this 'three'; we thus obtain a third column whose numbers are 'one', 'three', 'three', and 'one'.

Daily Program

9:00-10:00	10:00-10:30	10:30-11:30	11:30-12:00	12:00-12:30	12:30-14:00
R. M. Wilson (1)		J. Dinitz	M. Mohammad-Noori	E. Ghorbani	

14:00-15:00	15:00-15:30	15:30-16:00	16:00-17:00
Sh. Shahriari		M. Behbahani	E. Konstantinova

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[1] Karaji is a title and in Arabic titles are often preceded by the definite article *al*. Hence often you see his name referred to as al-Karaji.
[2] From John J O'Connor and Edmund F Robertson, *The MacTutor History of Mathematics archive*, available at http://www-history.mcs.st-andrews.ac.uk/history/index.html.

Picture of the Day
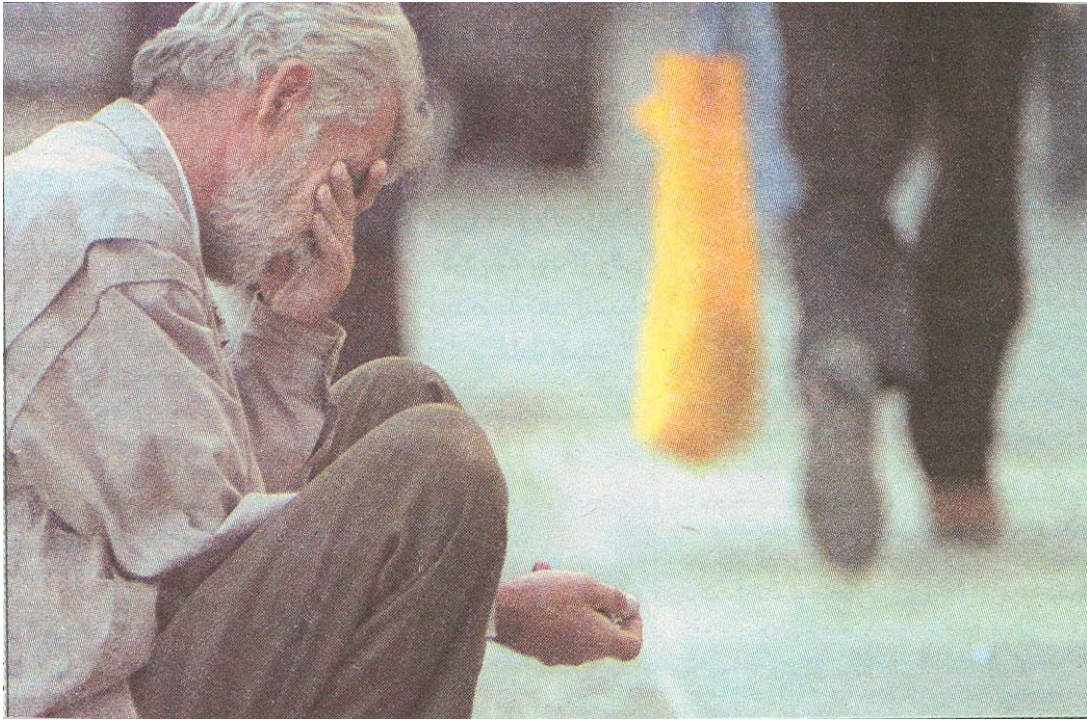
There are still some homeless mathematicians!

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