Max Schweins haur, Jr., '41; November 25, 1992; Anleboro, Mass.
Robert H. Simon, '41; SM '41; March 26, 1993; San Diego, Calif.
Victor S. Franz, '42, PhD '49; November 14, 1992; Silver Spring, Md.
George F. Floyd, Jr., '43, SM '47; ScD '49; October 5, 1992; Placerville, Calif.
Peter F. Leone, '44; May 26, 1992; Draxel Hill, Pa.
John D. Townsend, '44; June 21, 1992;
Jamestown, N.C.
Cutler D. West, '45; March 2, 1992; Arlington, Mass.
Betsy Larue Stevens, Jr., '46; February 13, 1993; Oceanside, Calif.
Marsh Walker, '46; October 29, 1989;
Chaplin, Conn.
Albert Oppenshaw, '47; May 21, 1991; Amsterdam, N.Y.
Richard H. Davis, '48; March 11, 1992; Scituate, Mass.
Reynold R. Krafi, Jr., SM '48; September 26, 1992; Beaumont, Tex.
Lan R. Leaven, SM '48; August 15, 1992; Toronto, Ontario, Canada
Glen C. Macon, '48; April 1, 1993; Lake Worth, Fla.
George W. Webb, Jr., '48, '49; April 9, 1993;
Buffalo, N.Y.
F. William Blocher, SM '49; February 28, 1993;
Wycuff, N.J.
Richard A. Cotton, '49; December 4, 1992;
Franconia, N.H.
Ladislav Delansky, SM '49; EE '52; April 6, 1993; Weston, Mass.
Kenneth E. Perry, '49; November 22, 1988;
Wayland, Mass.
Aaron Glickstein, '50
William B. Hewitt, '51; March 9, 1993; San Jose, Calif.
Rockville, Md.
John E. Marshall, '53; December 1, 1992; Fort Worth, Tex.
William J. Ferrini, '54; April 3, 1993; Rome, Italy
Abraham Perera, '54; February 19, 1993
William J. Alston, III, '56; April 1, 1993;
Ipswich, Mass.
John J. Burke, SM '56, MAE '57, PhD '68; April 5, 1993; Chestnut Hill, Mass.
Robert L. Cleland, '57, SM '51, PhD '57; April 29, 1993
John G. Howard, SM '57; February 1993; Sun City Center, Fla.
Chester W. Carter, '62; April 18, 1993;
Greensboro, Vt.
Asa P. Kinney, '62; February 15, 1993; Kennebunk, Me.
Thaddeus L. Ross, '62, PhD '66; March 21, 1993;
Silver Spring, Md.
Ralph C. Holm, '63; November 15, 1992;
Golden, Colo.
David Wilson, '67; June 7, 1992; Norwalk, Conn.
Richard E. Dupuy, Jr., '74, SM '75; November 28, 1992; Minneapolis, Minn.
Ira C. Levine, '74, '75 SB; October 21, 1992;
La Guna Beach, Calif.
Judith A. Fairchild, '75; November 24, 1992;
Sacramento, Calif.
Trevor A. Fisk, SM '76; March 14, 1993;
Haddonfield, N.J.
Franz T. Epps, Jr., '77; July 3, 1992; Houston, Tex.
Barbara B. Kops, SM '80; January 14, 1993;
Ouderkerk, The Netherlands
John E. DeRubeis, '83, SM '84; February 19, 1993; Cold Spring Harbor, N.Y.

As some of you may remember, I was the program chair for last year's International Symposium on Computer Architecture (ISCA 92). I just returned from ISCA 93 and it felt a little funny not having been involved. More interesting was that ISCA 93 was part of the Federated Computing Research Conference, a gathering of many computing subdisciplines, from the theoretical to the practical. I found it quite rewarding and recommend federated conferences to you all.

Problems

A/S 1. The late Bob High wanted to know the longest legal go game on a 2x2 board with no passes.

A/S 2. Thurston Sydor wonders where, in the first quadrant, the curve $x^y = y^x$ intersects itself.

A/S 3. Dave Mohr has noticed that the temperature sign in his bank alternates integer readings expressing Fahrenheit and Celsius. Assuming that the readings are perfect (and perfectly rounded), for what temperature(s) is one's uncertainty of the precise temperature at a minimum?

Speed Department

A Bridge quicky from Doug Van Patter.

You are South, having reached a poor six spade contract. West leads the seven of spades. Can you find a line of play

SEND PROBLEMS, SOLUTIONS, AND COMMENTS TO ALLAN J. GOTTLIEB, 67, THE COURANT INSTITUTE, NEW YORK UNIVERSITY, 251 MERCER ST., NEW YORK, N.Y. 10012, OR TO: GOTTLIEB@NYU.EDU
Precise to a Certain Degree

that has a reasonable chance of success given that spades split two-two?

Solutions

APR 1. Our first offering is a chess/timber problem from Winslow Hartford, who begins by pointing out that a closed knight’s tour is important for timber companies since it gives a pattern for cutting sections of a forest so that successive cuts are not on adjacent land. Even better would be a closed tour of a “superknight” that moves 3 squares in one direction and 2 in the other (instead of the usual 2 and 1). The smallest chessboard containing a closed knight’s tour is a 6x6. What is the smallest chess board containing a closed superknight’s tour?

The following solution is from Edward Sheldon: The smallest chess board containing a closed superknight’s tour is 10x10. “Odd” boards of any size do not permit a closed tour because the first and last move are odd and the move last to first, a requisite of a closed tour, is not possible. 2x2 and 4x4 boards are too small to permit consecutive moves and easily ruled out. Boards of size 6 and 8 do not work because forced moves out of corners go to the same squares and create small closed loops:

This precludes a grand tour on 6x6 and 8x8 boards. The above shows that boards of size 9 or less cannot contain a superknight’s tour. At least one tour exists for a 10x10 board:

4  1  2  3  4  3  2  1  3  4
2  4  3  2  1  3  2  4  3  2
1  2  4  3  2  4  3  2  4  3
3  2  4  3  2  4  3  2  4  3
4  3  2  1  3  2  4  3  2  1
The above was found using a recursive program written in GFA Basic on an Atari ST computer. Four-fold rotational symmetry was used to keep computation time reasonable. The above numbering scheme was used to show this symmetry.

The above is a solution because it proves that at least one superknight’s tour exists on a 10x10 board and that no superknight’s tour can exist on a smaller board.

APR 2. Samuel Gluss has a set of blocks that fits nicely into a wooden box as shown below. His father, David, notes that there are many ways to pack the pieces into the box and wants you to find one with the 1/2x3 piece placed horizontally in the upper left corner.

Ken Rosato shows us that such a placement is impossible:

Putting the 1/2x3 piece horizontally means the entire length of it must be made up by some of the 1/2x2 pieces, to allow the 1x1 and 1x2 pieces to fit evenly in the overall length of 7.

For the sake of turning this into a boundary condition problem, put them at the bottom as shown. The 4 1/2 width necessitates putting 1/2x2 pieces vertically. Put them along the right side as shown. At this point, 5 of the 6 1/2x2 pieces are used up. The right half of the right-most 1/2x2 piece on the bottom now needs to be balanced by a piece 1/2 wide, to allow the remaining pieces with a width of 1 to fit evenly in the overall length of 7. At the same time, the bottom-most 1 (up-down) x 1/2 (left-right) needs to be filled with a piece of width 1/2. Since there is only 1 remaining piece with width 1/2, it would have to be L-shaped as shown to fit. Thus there is no solution. (I think.)

APR 3. Nob Yoshigahara wants you to pile up the 12 pentacubes shown into a 3x4x3 solid. Nob adds that the solution is unique up to mirror image.

Mike Auerbach sent us a lovely illustration from Pentominoes by Jon Millington.

Richard Hess notes that there are 3,940 solutions but believes that if the pieces have alternate light and dark squares the solution may be unique and offers the following example.