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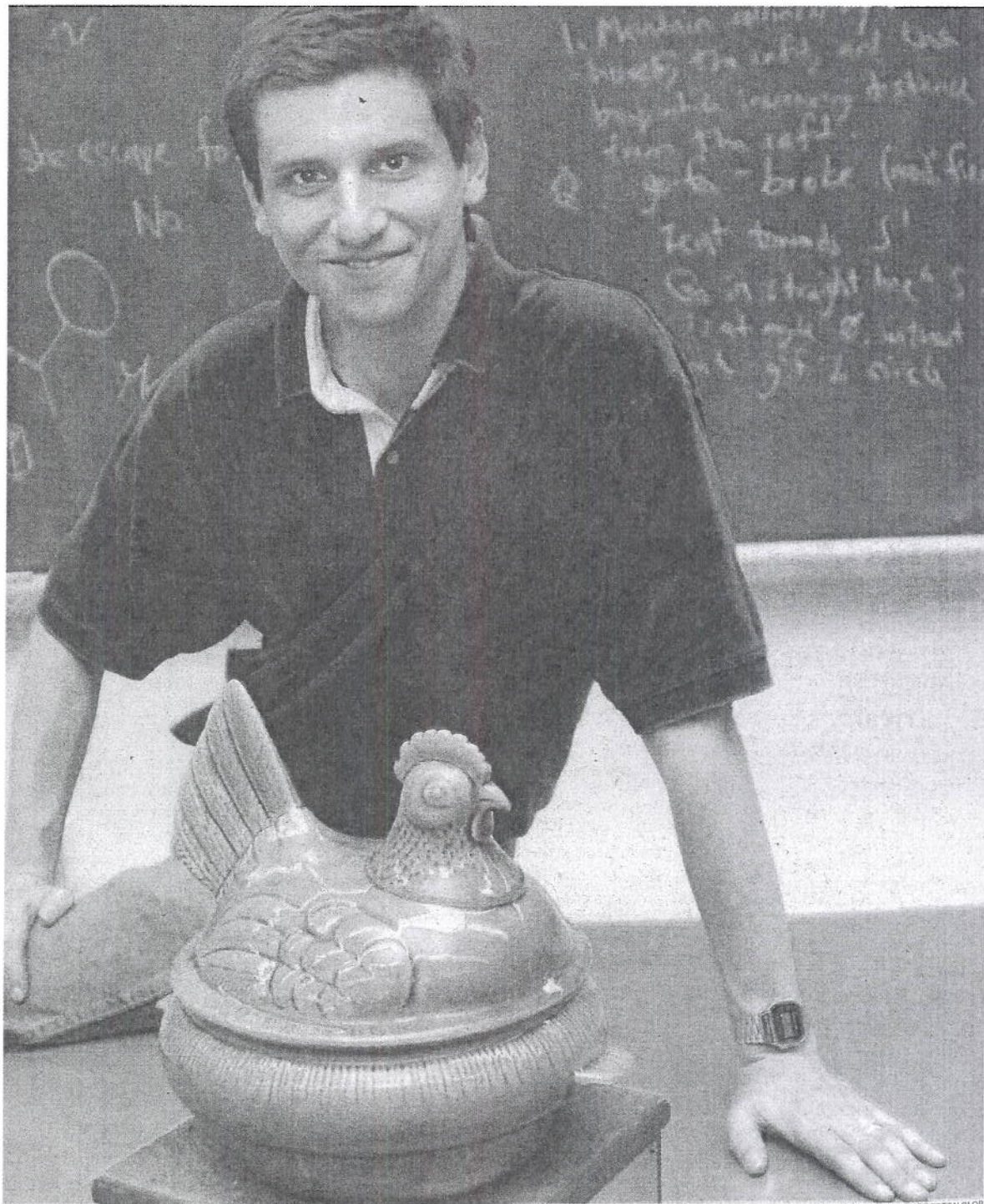
Why does
the ugly
green chicken
cross state
lines?

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STEPHEN ROSE FOR THE BOSTON GLOBE

professor of mathematics at Williams College, with the Green Chicken trophy, which has resided at the school since 2003.

LOBE · MONDAY, OCTOBER 13, 2008

Divide and conquer, and get the chicken

An ugly wedding gift has turned into a college rivalry's symbol of math supremacy

BY JOHNNY DIAZ | GLOBE STAFF

It

doesn't cluck. • It's not even attractive. • Avocado green with a porcelain puffed chest, "The Green Chicken" is a trophy that doubles as a casserole dish or cookie jar, depending on what is being served that day.

Each fall since 1978, math students at Middlebury and Williams colleges have

competed for this unusual but coveted trophy, which is also the name of an annual friendly but intense math tournament between the schools. The winning team gets to shelter this lustrous fowl for a year, until the next colorful math contest, which will be this year on Nov. 1.

"It's an honor to win the competition but maybe not an honor to have that trophy stick around your office for a year," said Victor Larsen, a Middlebury math major who has competed twice in the tournament. He competes again next month but not so much for the prize. "It's not the prettiest trophy, but it's a chance to answer some neat math questions."

Considered an unofficial math mascot at both campuses, the chicken has cultivated a flock of faithful and obsessive followers, who have gone as far as purloining and holding the fowl-shaped party decoration hostage for ransom.

"The Williams math department flaunts it," said Nick Arnosti, a Williams sophomore who competed last year and will do so again this year. The school's official mascot happens to be another colorful farm animal — the purple cow — while Middlebury's is a panther. "We want to win, but I don't know why we want to win this green chicken. I think it's more that we want to beat Middlebury."

So which came first, the chicken or the competition?

The trophy began as an unwanted wedding gift, given to the sister of Middlebury College math professor Bob Martin. When he moved to Ver-

mont, she gifted it to him as a housewarming present. In 1978 Martin, another Middlebury colleague, and a fellow Williams College math professor teamed up to create a numbers competition between the two schools, which had shared a long sports rivalry.

First called "The Middlebury-Williams Pre-Putnam Exam," the contest was a way for math students to prepare for the national William Lowell Putnam Mathematical Competition held in early December. It was also a way to give nonsports folks something to compete in.

When the trio of professors graded the exams at Martin's house, they hatched an idea: Give the winners some type of prize. Martin's wife suggested their green housewarming gift. It stuck.

"The big question we had to wrestle with is: Who should get it, the winners or the losers?" Martin wrote on his website, where he documents the competition and trophy's history. When Williams College won the inaugural tournament, the bird headed there, until the next math brawl.

"It's a way to promote some camaraderie among the students so they can meet some fellow math majors," said Pete Schumer, a Middlebury College math professor who leads that school's team.

The contest also gives students a chance to spread their mathematical feathers.

Weeks before, students take part in training sessions or "puzzle nights." The day of the event, held on a Saturday morning, students spend more than two hours solving six complex math problems worth 10 points each. Competitors must use creativity and logical thinking to come up with solutions that involve calculus and geometry. One example

involved chess: Is it possible to place five queens on the board such that three pawns can safely be placed on the board?

The winning college is determined when professors judging the contest add up the top four scores of each school. Since 2003, the fowl has roosted at Williams, marking the second time the college has carried a five-year winning streak. Middlebury's best was a three-year run from 1997 to 1999, and students there are feeling the pressure to win.

"We are going to have to get serious here and win one at some point," said Schumer, who has been involved in the competition since 1983.

For the most part, the chicken trophy remains under lock and key for safekeeping in a closet at Williams College's math department so that it doesn't wander off. In the mid-1990s, a thief swiped the trophy from the Williams campus and held it for ransom. A note featured letters cut out of a magazine, said Dick Quinn, Williams College's sports department spokesman. Suspects were named. A mock trial was held in the math department. The chicken was eventually returned.

But a few times a week, the chicken emerges from its coop at Williams for math discussions. Faculty members wheel it out on a snack cart after math seniors hold discussions with underclassmen and professors.

"It's really taken a life of its own," said Quinn, who will announce the Green Chicken competition's final score at halftime of an upcoming home football game between Williams and Wesleyan University. "It's not coveted by any means unless it's a math competition. The math department is crazy about it."

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Could you compete for the Green Chicken?

1. A college dormitory has 250 students. For every pair of students, A and B, there is a language that A speaks that B does not, and a language that B speaks that A does not. What is the smallest total number of languages that could be known by the students?

2. You have 1,000 coins in a row, numbered 1 through 1,000, all heads up. On Day 1, you turn over all the coins so that they're all tails up. On Day 2, you turn over every second coin beginning with coin 2. On Day 3, you turn over every third

coin beginning with coin 3, etc. You continue in this manner until Day 1,000, when you just turn over coin 1,000. After Day 1,000, which coins are tail up?

3. It is possible to get Chicken McNuggets in boxes of 6, 9, and 20. What is the smallest integer M such that for any $n > M$, it is possible to order exactly n McNuggets by choosing an appropriate number of boxes of various sizes? (i.e. what is the largest integer M that cannot be ordered exactly?)

4. Mr. and Mrs. Gauss invite four other couples to dinner. As the guests arrive they shake hands with everyone they know and no one else (of course they do not shake hands with their spouses). As they are being seated for dinner, Mr. Gauss proclaims, "Not including myself, I noticed that one of you shook hands with no one, one with just one person, one with two people, . . . and finally one with eight others." How many hands did Mrs. Gauss shake?

ANSWERS:
1. 10
2. After 1,000 days, coins with perfect square numbers will be tails, the rest will be heads. So 1, 4, 9, 16, 25, . . . , 961
3. $M = 43$
4. 4