

Gifted solve upper-level problems at camp

66 middle-schoolers attend CC to get on the right MathPath

By **BRIAN NEWSOME**
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In a cavernous hall at Colorado College, some 60 students listen to Professor Tom Drucker lecture on the history of mathematics.

He talks about quaternions and octonions, and the evolution of calculus. He urges his students to use rigor in proving solutions to the complex problems that can take days to solve.

The thing is, school is out of session. And the students, well, they don't go to CC. They're in middle school.

It's called MathPath, a summer camp for the profoundly gifted. The students, who come from 21 states and Canada, descended on CC on June 26. Selected for their unusually high abilities to grasp college-level math concepts, they've spent the past month racking their brains seven hours a day, five days a week — and loving it.

For most preteens and teens, MathPath would be the summer camp from hell. Yet for these students it's a chance to indulge in their enthusiasm for an unpopular topic and meet like-minded friends who share their abilities.

"I'm definitely one of the few who like math at my school," said Amber Verser, 13, of Loveland. Verser started reading clocks as a toddler. She's since scored a perfect 800 on the math portion of the SAT. On the American Invitational Mathematics Examination, a test for some of the nation's brightest math students, she scored a five out of 15, double the average score for a gifted high school student.

George Thomas, a mathematics scholar who started MathPath four years ago, said the program is designed to teach students to "think hard." The concepts, taught through lectures and hands-on problem solving, are the same that college math majors learn.

"Ideally, the campers who most benefit from this will be those who become mathematicians and who go into mathematics-related fields," he said.

To find students, MathPath sends applications to about 59,000 middle schools nationwide. About a thousand personal letters are mailed to students who have stood out at various math competitions. Those students make up about 90 percent of the applicants.

To be admitted, a student must successfully solve at least five of eight math problems on the application. Some of the problems, Thomas said, are designed to pose a multiday challenge for a university-level math student. Of 400 applications, 68 students were accepted and 66 attended.

"I would say these students are like 1 in 10,000 in the middle schools," Thomas said.

The camp, which ended Sunday, takes place at different campuses each year. Last year it was in Rhode Island.

This year, five students attended from Colorado, one of them, Allan Gardner, 11, from Colorado Springs. Gardner attends Holy Trinity Catholic School.

Students say it's hard for them to describe where their passion for frustratingly hard problems comes from. For Anand Natarajan, 12, of Boulder it's the "visceral pleasure of getting a simple proof to a hard problem." Charlie Stoddard, 14, of Steamboat Springs said there's "an internal beauty of math."

Many of the middle-schoolers are in independent study programs. Stoddard, for example, is taking multivariable differential calculus. He also scored perfect on the math portion of the SAT.

To connect with other math enthusiasts, they rely on the Internet. Their Web site of choice: artofproblemsolving.com.

Though math brings these middle-schoolers together, it's not their only interest. Stoddard is a ski jumper and self-proclaimed jock. Verser, an avid reader, has read the newest "Harry Potter" book four

times, and she wants to study medicine, music or veterinary medicine in college. Natarajan plays the piano.

After Drucker's lecture Thursday, Natarajan and another student, Daniel Houck, 12, of Jefferson County walked across campus and told a joke that perhaps only the math enthusiast can appreciate:

"What's the area of a circle?"

" $(\pi)r^2$."

"But pies are round."

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