Comps Talk

Several Complex Variable Functions and the Weierstrass Preparation Theorem

Charlie Gamble
April 20, 4 p.m., CMC 206

Functions of a several complex variables have properties that are very different from those of single complex variable functions. This talk will explain what a holomorphic function in \( n \) variables is and will show the most important algebraic properties of these functions. It will give a proof of the Weierstrass Preparation and Division Theorems using only Cauchy's Residue Theorem and Integral Formula from single complex variable analysis and will discuss some important consequences.

Math T-Shirt Design Contest

Want to dress the Math Department? Submit your designs for the department t-shirt. E-mail your design submissions to Helen Wong (hwong) by Friday, April 23.

Upcoming Events

Here are a few of the upcoming events in the Mathematics Department.

4:00 pm Tuesday, April 20: Charlie Gamble’s Comps talk in CMC 206 (see above).

5:00 pm Friday, April 23: Origami with Gail! Come learn to make a buckyball out of Post-it Notes. Pizza will be served.

3:30 pm Thursday, April 29: Welcome, new majors! The Math Department faculty, staff, and majors will get together to welcome newly declared mathematics majors. Some tasty treat(s) will be served.

4:00 pm Thursday, April 29: Juniors should stick around after the welcome party to learn about the comps topics to be offered next year. Juniors will receive an e-mail with more information about the topics and should respond to the e-mail if they are not able to make the meeting. Anyone is welcome to attend the meeting.

4:00 pm Thursday, May 6: Colloquium talk by Jenise Swall in CMC 206.

3:30 pm Thursday, May 20: The final Comps Gala of the year in Olin 141!

12:00 Tuesday, June 1: The Math Department Annual Picnic.

Watch for more details and other events in the Gazette and on the whiteboard.
Math in the News

Steven Strogatz’s New York Times column continues! The latest installment, titled “Change We Can Believe In,” takes on the idea of the derivative. The column, published every Monday, deals with math “from basic to baffling” and is truly a joy to read. Check it out!

Employment Opportunities at the Mayo Clinic

The Division of Biomedical Statistics and Informatics has opportunities for bachelor level statistical programmers. These positions require experience in computer programming and use of software packages, such as SAS, S-PLUS & R, for data management and statistical analysis. Candidates must have a B.S. degree in statistics or another quantitative science with experience and coursework in applied tics. Proven written and oral communication skills are essential as well. For information on the Division of Biomedical Statistics and Informatics visit our website at: http://mayoresearch.mayo.edu/mayo/research/bio stat/. To check our current openings enter "Statistical Programmer Analyst" as a keyword at Mayo Clinic’s job website (http://www.mayoclinic.org/jobs-rst/). At this site you’ll be able to apply for an open position by completing an online application.

This Week in History

Mathematician Emmy Noether died this week in 1935. Noether did not originally intend to pursue mathematics; as a young woman she studied for her certification to teach French and English in Bavarian girls’ schools. However, after completing her teaching certification, instead of continuing on to teach, Noether began studying mathematics. At the time, women could not enroll at university, but could attend courses with the permission of the professor. Eventually Noether was allowed to matriculate and received her doctorate, but it would be years before she was allowed to join the faculty at any university. Over the course of her mathematical career, Noether made many important contributions to the field of algebra. In 1933 Noether was expelled from the University of Göttingen by the Nazis because she was Jewish. To find out more about Emmy Noether, or to read more about other mathematicians, read the Mathematician of the Day at: http://www-groups.dcs.st-and.ac.uk/~history/Day_files/Now.html

PROBLEMS OF THE WEEK

1. Find the last nonzero digit of 100!, and show why your answer is correct. (100!, pronounced "100 factorial", is the product of all positive integers up to and including 100.)

2. Let A and B be invertible n x n matrices (with real entries). We'll say that the matrix A is friendly to the matrix B if there exists a matrix C such that AB = BC = CA.
   a) Show that if A is friendly to B, then B is also friendly to A.
   b) Does the result of part a) remain true if only one of the matrices A and B is assumed to be invertible?
   c) Does the result of part a) remain true if neither of the matrices A and B is invertible?

More nice weather, and a continuing drought of solutions - except for the first problem posed April 2, which was solved by Matt Adams. Matt should stop by CMC 217 some time to pick up a "C" block or other B.B.O.P. item. Good luck on the new problems ...

- Mark Krusemeyer

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