

POINTS AND ANGLES

Newsletter of the Metropolitan
Mathematics Club of Chicago



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MATHEMATICAL PUZZLES

ASKING THE RIGHT QUESTIONS AT THE RIGHT TIME

Terry Wyberg
Mathematics Education Professor
University of Minnesota

By CONRAD WAYNE

When we solve a puzzle or a problem, our tendency is to solve it and move on. But if we stop and think about it, there are lots of questions that we can ask which will enhance the mathematical experience. The important words when we are solving problems are "what if" and "suppose that". Dr. Terry Wyberg will present several problems to be solved during his presentation. His talk will highlight the importance of choosing problems for our students that contain important mathematics, asking the right questions at the right time to engage students in the mathematics and then stepping back to observe the amazing things children are capable of doing.

Dr. Wyberg has been teaching methods courses in mathematics education for the past nine years at the University of Minnesota. He has been particularly involved in the university's M.S. in Mathematics with emphasis in Mathematics Education. Students accepted in this program have to take a year of advanced mathematics courses and mathematics education courses, have been accepted as a teaching assistant in the Mathematics Department and do a semester of student teaching at the high school level.

Come join fellow MMC members for an entertaining and thought-provoking evening. Many thanks to Glencoe-McGraw/Hill for providing appetizers before dinner and wine with the meal.

REMEMBER!! You can earn CPDU credits for attending dinner meetings!

Date: Friday, November 3, 2006

Time: 5:30 p.m. Doors Open
6:00 p.m. Social Hour
7:00 p.m. Dinner and Talk

Place: Fountain Blue Banquets &
Convention Center
2300 Mannheim Rd.
Des Plaines, IL
(847) 298-3636

Cost: Members \$31
Nonmembers \$37

RESERVATION DEADLINE
Monday, October 30, by noon,
please!

To RESERVE:

Call Evanston Math Department at
(847) 424-7600 or
email: reservations@mmcchicago.org
Requests for special meals *must* be made
in advance.



**From Southbound I-294 &
Eastbound I-290:**

Exit at I-190 West to O'Hare; Exit onto North
Mannheim Rd.; Take Mannheim Rd. North
2.25 miles.

From Northbound I-294:

Exit at West Touhy Ave.; Take Touhy Ave. to
Mannheim Rd.; Turn right on Mannheim Rd.

Public Transit:

Take the CTA Blue Line to the Rosemont
Bus Terminal; Take Pace Bus #223; Exit at
Touhy Ave. & Lee Rd.; Walk East on Touhy
to Mannheim Rd.

Future Meetings:
December 1, January 19, February 23,
April 13, May 11

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Points From the Interior of the Angle

BY RICH RUKIN

About eight years ago, the Phi Delta Kappan published a study about the effectiveness of in-service efforts in schools. One of the conclusions was that Math was unique with regard to in-service. The study showed that for Mathematics, the in-service needed to be directly related to the subject being taught or it was mostly worthless. This was slightly true in Science, but not true for subjects like History and English.

Last year, as we were interviewing candidates for teaching positions, we asked them what kind of things they do to improve. For many, the only answer was an in-service in their school, often not related specifically to what they teach. Unfortunately, more and more schools are trying to get by like that. It's cheaper and they often think that one size fits all. After all, if an administrator is former English,

History, or PE teacher, they felt that these kind of generic in-services were useful, so they must be valuable for everyone.

We need to educate our administrators. They need to learn that in order to improve as a math teacher, we have to be involved in specifically mathematics in-service. This can mean bringing in someone to work with math teachers separately from the other disciplines, but most often can be best accomplished by sending math teachers to math meetings. Attending NCTM, ICTM, and MMC meetings (among others) is the way to improve as a math teacher. All teachers of mathematics need to be involved in their professional organizations and participate in the meetings. This is how we become better teachers, network to find best practices and information, and also give back to the profession and help newer teachers improve.

Be sure to go to meetings you aren't so good at. If you aren't familiar with technology, go learn about it. If you aren't comfortable with math puzzles, go to a meeting on puzzles. This is how you expand your repertoire.

So, get to meetings and make sure to get your colleagues involved as well. We have MMC meetings each month, the MMC Conference is at Glenbrook North and is one of the best conferences of its type in the country (probably the best). The NCTM Regional Meeting was well attended. Other organizations, like T3, will be meeting in Chicago this school year. None of these require large commitments of money since they're local. Make sure that you get to as many of these as possible and get others to attend as well.

You can also get involved in doing things for MMC and other organizations. Volunteer a little bit of your time to help. For example, if you are going to be at an MMC meeting and would like to write up a talk summary for Points & Angles, let one of the Board Members know. We can arrange it. Perhaps you can volunteer to help at the Conference as it's only a bit of time on a Saturday morning.

Get involved and stay involved. The rewards for you and your students will be substantial.

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NCTM Call for Manuscripts

Contributors Needed for NCTM Books on Empowering Mentors of Teachers of Mathematics

Current teacher shortages have led to major concerns regarding the recruitment and retention of highly qualified teachers of mathematics in the nation's classrooms. In response to this issue, NCTM published the Empowering the Beginning Teacher of Mathematics series in 2004. This new companion series will be designed to assist and support mentors in developing positive and productive mentoring relationships. The working title for each publication is as follows:

Empowering Mentors of Teachers of Mathematics:

Elementary School, Empowering Mentors of Teachers of

Mathematics: Middle School, and Empowering Mentors of Teachers of Mathematics: High School.

The purpose of these publications is to assist those who find themselves in the role of mentoring a teacher of mathematics, formally or informally. Mentor may refer to individuals who have participated in formal mentor training or who serve in the capacity of instructional coach, peer coach, lead teacher, collaborative peer, department chair, administrator, critical friend, team leader, university supervisor, or department or grade-level colleague.

The editorial panel envisions these publications to be practical "how to" books, each approximately 60 pages in length, and thus is seeking contributions ranging from one paragraph to three-page descriptions. Editorial decisions will be made by the members of the editorial panel: Gwen Zimmermann (chair), Linda Fulmore, Patricia Guinee, and Elizabeth Murray. Please visit the NCTM Web site at <http://nctm.org/publications/book.htm> for suggested topics and submission guidelines. Submissions, which will receive a blind review, are due no later than February 1, 2007.

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The official club website: <http://www.mmccchicago.org/>

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MMC Problems November 2006

In a pre-calculus class, there is always a need for problems that use convergent sequences. Here are a couple that can be solved using convergence, but become much easier by developing powerful techniques of linear algebra. Problems that can be revisited and elevated to a different means of solution provide one of the primary aspects of mathematical thought.

1) A large lake Lobehome divides itself naturally into three habitats, west, east, and south. Fish swim in the lake and migrate from habitat to habitat. At the beginning of a year, each habitat has 1,000,000 fish. From the west, a fish stays in the west 80% of the time or migrates to the north 10%. A fish in the eastern habitat stays there 50% of the time or migrates to the south 20%. A fish in the southern habitat stays there 60% of the time or migrates to the west 20%. At the end of the year, how many fish are in each habitat (fractional fish are acceptable numbers)?

2) A student has a constant mood each day, either happy or ecstatic. Happy is she when she solves a new problem and ecstatic when she solves two. If she is happy one day, she is happy 80% of the time the next day. If she is ecstatic, she is ecstatic the next day 10% of the time. [It is really difficult to solve two problems on two consecutive days.] In general, what is the probability that our student is happy on a day?

Michael Keyton
IMSA

Special Offer for the 2006-2007 School Year “Buy 2, Get 1 Free!”

For this school year, 1st and 2nd year teachers who become members of MMC will receive their third meeting free when they come to two dinner meetings!

Take advantage of this tremendous opportunity to get involved with a great organization, hear top-notch speakers and meet fellow math teachers from throughout the Chicagoland area.

To participate, leave your name at the registration table
when you attend your first two meetings,
and your third meeting will be free!

Thanks to an anonymous MMC member for generously funding this program.

NOTICES & REMINDERS

2007 T3 International Conference
 March 9-11, 2007
 Hyatt Regency Chicago
 For more information visit
education.ti.com/us/t3chicago

Save the Date!

USACAS 2007 will be held at Illinois Mathematics and Science Academy in Aurora, IL on June 16 - 17, 2007.
 Visit www.meeCAS.org for more information.
 Speaker applications are now being accepted online.

Next MEECAS meeting will on Saturday, November 18 9am - 12 noon at Schaumburg High School
 Contact Michelle Eggerding at meggerding@d211.org to RSVP or for more information.

Organized by MEECAS

Don't Miss:
The MMC Conference of Workshops

Saturday, January 27th
 at Glenbrook North High School

NCTM Annual Meeting
 Atlanta, Georgia
 March 21 - 24, 2007

If you would like a notice or reminder to appear in **POINTS AND ANGLES**, please email the text you would like to appear to kristenclegg@comcast.net no later than the date of the MMC meeting preceding the issue in which you would like it to appear. All notices are subject to editing.

Your membership renewal date appears in the upper right corner of the label.



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