



Late Winter 2008

# AMC's Math Messenger

The Mathematical Association of America's American Mathematics Competitions

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## Prep Workshop

**PREP 986-8G AIME High: Preparing Teachers to Help Students Be Successful on the AIME** -- June 16-20, 2008 on the campus of the University of Nebraska, Lincoln, NE.

We will be hosting a one-week, intensive workshop to assist talented teachers, mathematics coaches, and collegiate faculty serving as mentors for their local high school in preparing students for the more competitive and challenging AIME exams. This PREP workshop will address the level of preparation coaches need to more fully develop the mathematical talent that exists across the country. Our team of outstanding problem solvers will work intensively with teacher-coaches and collegiate mentors whose students regularly do well on AMC but struggle with the questions on the AIME. We intend to increase the pool of high school math team coaches who have the expertise to develop their students at the AIME level and to assist the participants to guide their colleagues in neighboring schools in the years that follow the workshop. This workshop will create a network of knowledgeable teachers who have worked together

- prior to the workshop,
- intensively during the workshop, and
- are supported to continue cooperative interactions after the workshop, both face-to-face and via the internet.

The participants of this PREP workshop will serve as local leaders when they return home and will form part of the foundation upon which a systematic improvement in the preparation of high school faculty to work with highly talented students on mathematical challenges can be built. The executive committee and membership of SIGMAA TAHSM fully supports this workshop. Watch for more information and registration at <http://www.maa.org/prep/>

## *Please Send Us Your Photos:*

To submit your pictures, be sure to follow your school policy on photographs of students, and then include them with the answer sheets or send them electronically to:

**rroyer1@maa.org**

Please include the following information, which will caption the pictures: School Name, Teacher, Class/Club, City, State (optional: web address for school). I will send a return email to acknowledge receipt, so if you don't hear back within a week, call me at 1-800-527-3690 to check. Every year some get lost in cyber space.

If you need help taking the photos, why not ask the school newspaper or year book to take a few for the publications, and ask them to send a few to us!

## ADM/MAA Teacher's Circle Workshop

**Tentative Dates: June 16-20, 2008 in Palo Alto CA, and July 21-25, 2008 in Washington DC.** Plans are underway for two identical Teacher's Circle Workshops this summer, one on each coast.

This workshop, sponsored by American Institute for Mathematics (AIM) in Palo Alto, the Mathematical Association of America and the National Science Foundation, will train teams of teachers and mathematicians to run a "Teacher's Circle" for middle school math teachers. In August, 2006 a group of middle school teachers met at AIM to practice problem solving and to discuss ways to incorporate it into their classrooms. It was called a Teacher's Circle and was modeled after the Math Circles for students that originated in Eastern Europe and are now run in many parts of the United States. Math Circles empower students, but Teacher's Circles empower teachers, each of whom can influence thousands of students over the course of a career. The purpose of this workshop is to help teams organize Teacher's Circles around the country. The AIM Teacher's Circle met every day for a week during the summer. Each meeting typically had a mixture of lecture, discussion and working on problems, discussion of the process of solving the problems, and an exploration of how these ideas can be used profitably in the classroom. The mathematical content of the Circle is interesting, but the real focus is on problems and the process of solving problems. The teachers who participate in the Circle report that the Circle has helped their problem solving abilities and also helped them to convey different aspects of problem solving to their students. They also report that it has helped them teach the required school material better -- approaching subjects from different angles -- as a result of problem-solving experience.

Watch for more information at <http://aimath.org/ARCC/workshops/teacherscircle.html> or from us.

## *NEW Contest Problem Books coming soon!*

You are probably familiar with the very popular Contest Problem Series, Volumes I-VII with all of the competition problems up to 2000. Two new volumes are in final production stages and will be available soon! Contest Problem Book VIII, American Mathematics Competitions 10 2001-2007 by Douglas Faires and Contest Problem Book IX, American Mathematics Competitions 12 2001-2007 by David Wells will be published winter 2008 by the Mathematical Association of America. Each book will have all of the contest problems including all of A and B versions of the contests from 2001-2007. Also included are additional solutions and commentary on the problems, as well as a history of the contests. You will be sure to want to order these for your problem book library as soon as they are available.

## *Calculator Policy:*

Starting in January 2008, all AMC exams at all levels will not allow calculator usage. In particular, the 2008 AMC 10 A, 2008 AMC 12 A, 2008 AMC 10 B and 2008 AMC 12 B in February 2008 will not allow the use of a calculator. (The November 2008 AMC 8 also will not permit the use of a calculator.)

A word of explanation is in order about this policy: This change comes after repeated lengthy discussions over a period of several years between AMC staff, the contest committee chairs, and sponsoring organizations. All of these, and in particular the contest committees who create, edit and polish the contests are still enthusiastic advocates of calculator usage by students in classrooms. The decision to make the AMC contests calculator-free came about for several reasons. The foremost of these has to do with the fact that not every contestant has the same level of calculating power available. Some modern calculators can do feats of factorization, equation solving and graphing, geometric constructions and even programming that make some interesting mathematical questions pointless. In order not to place any student at either an advantage or disadvantage, we have had to create problems that render even the most sophisticated calculator essentially useless but which reward creative thinking. One advantage of the coming calculator-free format is that contests can once again contain some of the easier computational exercises that often appeared as early problems on the pre-1994 contests.

## *New and Improved*

### *AMC 10 / AMC 12 Email Reports:*

Since 2001 the AMC office has been emailing the AMC 10/12 contest results directly to teachers, followed in the mail by the familiar paper report accompanying the awards pins and certificates. Emailing the results gives you the results in the fastest way possible, immediately after we have processed your answer sheets. We have now added a new feature to the emailed reports: Along with the results in the usual report form, we will now also include all individual student data in comma-delimited format, so you can import the results immediately into a spreadsheet for analysis. This will allow you to analyze your school results in the way that is most meaningful to you with your favorite software. We hope you enjoy this new feature, along with all the familiar reports you are used to seeing.

### *AMC 10/AMC 12 Scoring and Points:*

REMEMBER: The score for a correct answer on the 2008 AMC 10 and AMC 12 is 6 points. The score for a blank is 1.5 points. The score for a wrong answer is 0 points. This scoring system has important consequences for guessing. Unless a student is fairly sure of the answer, it is better to leave a question unanswered than to guess. If a student can reduce a problem to three possible answers it is advantageous to guess one of the three possible answers. If a student can only reduce to 4 possible answers by eliminating one of the possibilities, then it is not advantageous to guess. Also, note that with this scoring system it takes 14 correct answers and 11 blanks to score 100 to qualify for the AIME from the AMC 12. This scoring system requires 19 correct and 6 blanks to qualify for the AIME from the AMC 10.

## *2007 AMC Survey Results:*

Last year, for the 2007 AMC 10 and AMC 12, many of you completed a teacher survey which accompanied the contests. The survey was about the math classes taken by students who complete calculus (usually an AP Calculus course) by the end of 11th grade. Prof. Ann Watkins of California State University, Northridge is writing a report and statistical analysis of the survey, which will be submitted for publication. The results are fascinating. We are drawing important conclusions from that survey. One result is that this is a relatively large group of students, and because of their accelerated education, probably a group important for national educational goals in science, mathematics, engineering, and technology. Once the report is finished, we will summarize the results for you.

## *Hard Problems: A film about the 2006 IMO:*

The film “**Hard Problems**” about the 2006 USA team to the IMO in Ljubljana, Slovenia is nearing completion. MAA President-Elect Joe Gallian secured a grant from Larry Penn, who was on the U.S. Math Olympiad Team in the late 1970s to fully fund a documentary film about the students in the USAMO, and the USA team at the 2006 International Math Olympiad. The director is George Csicsery, who produced an award winning film on the mathematician Paul Erdos and a new film about the American mathematician Julia Robinson. A working draft of the finished film was shown at the USAMO to the enjoyment of all present. We expect to see the finished film in late 2007.

## *Compact Disk with previous AMC exams*

We have compiled a compact disk with PDF versions of the AMC 8 (1999-2007), the AMC 10 and AMC 12 (both A and B versions, 2000-2007) the AIME (both I and II, 2001-2007) and the USAMO (2001-2007). Each contest will have both the problems and the solutions in separate files, and we will include all the worksheets we have constructed thus far. We will be offering this CD with the Math Club Package, and it will also be available for sale as a separate item. Get this now, so you can prepare your students with all the 21st century contests!

## *Problem Proposing:*

Give your great mathematics problem an audience of thousands of students and teachers worldwide! The American Mathematics Competitions is always in need of good, new mathematics problems for our contests. If you would like to join our panel of problem proposers, please contact Steve Dunbar at [sdunbar@math.unl.edu](mailto:sdunbar@math.unl.edu) and we will send you a Problem Proposer enrollment form, along with directions for submitting mathematics problems to us.

### *2007-2008 AMC Contest dates:*

AMC 10 & AMC 12 - Tuesday, February 12, 2008  
or Wednesday, February 27, 2008

AIME - Tuesday, March 18, 2008  
or Wednesday, April 2, 2008

USAMO - Tuesday & Wednesday, April 29-30, 2008  
MOSP - June 2008

AMC 8 - Tuesday, November 18, 2008