



Winter 2008

# AMC's Math Messenger

The Mathematical Association of America's American Mathematics Competitions

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## *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.

## *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.

### *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!

## *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 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.

## *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.

## *MAA Website:*

Check out the MAA Website at [www.maa.org](http://www.maa.org) for interesting information about mathematics. We are working to expand our website offerings to high school students and teachers, so watch for new offerings there as well as the AMC website [www.unl.edu/amc](http://www.unl.edu/amc)

## IMO 2007 - Hanoi, Vietnam

The 2007 International Mathematical Olympiad (IMO) for high school-age students was held July 23-30, 2007 in Hanoi, Vietnam. The U.S. team members won two gold medals (Alex Zhai, Sherry Gong), three silver medals (Brian Lawrence, Eric Larson, Arnav Tripathy), and one bronze medal (Tedrick Leung).

Russia's six-member team captured first place. They scored 184 out of a possible 252 points. Five of the six team members earned gold medals. The U.S. team placed fifth (155 points). In the official results, the other teams that came in ahead of the U.S. were China (181 points), South Korea (168), and Vietnam (168). Teams from 93 countries, with over 500 students present took part in the competition. At the IMO, the USA team has consistently finished in the top five for the last eight years. More details on the IMO results are available on the web at <http://www.imo2007.edu.vn>

The competition poses six math questions to be solved, three very challenging problems each day in a 4.5 hour session. Congratulations to the team for a fine performance on what the leaders agree was a very hard IMO. Thanks also to the team leader Zuming Feng and coach Ian Le.

Photos from the team training and touring are on our website at [www.unl.edu/amc](http://www.unl.edu/amc). The 2008 International Mathematical Olympiad will be in Madrid, Spain.

## Chinese Girls Math Olympiad

Sherry Gong, from Exeter, N.H., earned a gold medal and tied for first place at the 2007 China Mathematical Olympiad for Girls, which was held in Wuhan, China, from August 11-16.

The MAA co-sponsored the participation of two four-member teams of high school girls — one made up of participants from the eastern U.S. and one from the western U.S. This was the first time the U.S. participated in that math olympiad, which has been held annually since 2002.

The East team members were Sway Chen (Lexington, Mass.), Jennifer Iglesias (Aurora, Ill.), Wendy Hou (Tampa, Fla.), and Sherry Gong. The West team members were Marianna Mao (Fremont, Calif.), Wendy Mu (Saratoga, Calif.), Colleen Lee (Palo Alto, Calif.), and Patricia Li (San Jose, Calif.). These students were chosen from the ranks of the top female finalists in the 2006 USAMO.

There were about 180 students from 42 teams in the China competition. Zhuo Chen, from Wuhan, China, tied Gong for first place with 114 points (out of 120). U.S. team member Wendy Hou received a silver medal, while Wendy Mu, Patricia Li, and Mariana Mao garnered bronze medals.

The teams went to Beijing, then to Wuhan, the capital of Hubei province, in central China, for the competition. For photos and messages from the girls during their travels, see [www.msri.org/specials/gmo](http://www.msri.org/specials/gmo).

Coaches for the U.S. team were Melanie Matchett Wood, a graduate student at Princeton who was the first female to make a U.S. International Mathematical Olympiad (IMO) team; Alison Miller, a member of the 2004 U.S. IMO team; and Zuming Feng of Phillips Exeter Academy and director of the Mathematical Olympiad Summer Program since 2003.



2007 IMO Team with their medals, from left: Sherry Gong, Tedrick Leung, Arnav Tripathy, Alex Zhai, Brian Lawrence, and Eric Larson.

## 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 are compiling a compact disk with PDF versions of the AMC 8 (2001-2006), the AMC 10 and AMC 12 (both A and B versions, 2001-2007) 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

[www.unl.edu/amc](http://www.unl.edu/amc)

[amcinfo@maa.org](mailto:amcinfo@maa.org)