



# Math League News

■ **Our Calculator Rule** Our contests allow both the TI-89 and HP-48. You may use any calculator without a QWERTY keyboard.

■ **Send Your Comments** to [comments@mathleague.com](mailto:comments@mathleague.com).

■ **Typographical Error on Contest #3 (December 3)**

There is a typographical error on question #3-6 on High School Contest #3 scheduled for December 3. Please write on the outside of contest envelope #3 that for Question #6 students should replace "9" with "8" so that the two consecutive numbers listed are "8's." No other change is necessary in the question. Please do not open contest envelope #3 until the contest date. We have emailed each school's faculty contact a corrected contest pdf. On the contest date, the contest administrator may either instruct the students to make the correction written on the outside of contest envelope #3 OR the contest administrator may make copies of the revised contest from the corrected pdf and use these copies with the students.

■ **Error on Contest #6 (March 11)**

There is an error on question #6-6 on High School Contest 6 scheduled for March 11. Please write on the outside of contest envelope #6 that for Question #6 students should replace "2014" with "the fourth root of 2014." No other change is necessary in the question. Please do not open contest envelope #6 until the contest date. Approximately two weeks before the official contest date, we will email school contacts a pdf with the corrected contest and a corrected solutions sheet. On the contest date, the contest administrator may either instruct the students to make the correction written on the outside of contest envelope #6 OR the contest administrator may make copies of the revised contest from the corrected pdf and use these copies with the students. The solutions sheet inside contest envelope #6 should be replaced with the corrected pdf of the solutions.

■ **Contest Dates**

Future HS contest dates (and alternate dates), all Tuesdays, are December 3 (Dec. 10), January 14 (Jan. 21), February 11 (Feb. 18), & March 11 (Mar.18). (Each alternate date is the Tuesday following the official date.) For vacations, special testing days, or other *known* disruptions of the normal school day, please give the contest on the following Tuesday. If your scores are late, please submit a brief explanation. We reserve the right to refuse late scores lacking an explanation. We sponsor an *Algebra Course I Contest* in April, as well as contests for grades 4, 5, 6, 7, & 8. See [www.mathleague.com](http://www.mathleague.com) for information.

■ **Regional Groupings**

Within guidelines, we try, when possible, to honor regional grouping requests for the next school year.

■ **What Do We Print in the Newsletter?**

Space permitting, we print every solution and comment we receive. We prepare the newsletter early, so we can use only what we have at that time.

■ **How Do I Change the Spelling of a Student Name?**

Please note that an advisor can always return to the Score Report Center to change the spelling of a student's name or to correct a score. Accordingly, we try to stay out of the loop on such changes. Any advisor noticing a need for such changes should feel free to make them directly.

■ **Can I Add Additional Names and Scores to an Earlier Contest?**

One advisor asks, "Since some students did very well in the second contest, can we add their names (with the scores) to the Contest 1 report?" We always allow adding additional names and scores to an earlier contest as long as the additions do not affect the team total previously submitted for the earlier contest.

■ **Administer This Year's Contests Online**

Any school that is registered for any of our contests for the 2013-2014 school year may now register at [www.online.mathleague.com](http://www.online.mathleague.com) for the 2013-2014 Online Contests at no cost. The advantages of administering the online versions of our contests rather than the paper and pencil ones are that you do not have to grade your students' papers and that you do not have to submit any scores at our Score Report Center ~ these tasks are done automatically for you when your students take our contests online. If you decide to use this free service, you must set up your account and set the day you are going to administer each contest at least one day in advance of the actual contest date.

■ **General Comments About the Contest**

Mark Luce said, "I thought this was a terrific contest with some ingenious problems." Suzanne Antink said, "We do LOVE the contests." Chip Rollinson said, "Overall, I thought it was a relatively easy set of questions. However, judging from a bunch of low scores, my students would disagree." Josh Turner said, "What a difference in perception! When I took the contest myself I got the 1st 5 questions correct in about 7 minutes. I thought we might be in for some really good scores. My students certainly did not feel like I did!" James Conlee said, "#4 and #6 were great questions. Surprisingly, these were the two most commonly missed questions." Tim Shafer said, "Thanks for the great contests!!! They are always a huge source of learning and enjoyment." Kipp Johnson said, "Thanks for all the hard work you put into these Math League contests. The problems are a refreshing change from those in the textbook. (Textbook problems can be challenging, but they usually don't have the variety you get in a Math League contest. I think you could have used algebra, trial and error, geometry, a little trigonometry, and some logic to solve yesterday's problems.) After years of doing this, I shouldn't really be surprised when some of the best students in Precalculus and Calculus don't do well on the Math League problems. They require a different approach, and repeating what you've seen the teacher do on the board three dozen times won't work on these problems. And if nothing else, they force students to read carefully. (The first problem didn't just say the next date; it had to be with consecutive integers. There's a big difference!) Keep up the good work!"

■ **Question 2-1: Appeals (Accepted and Denied)**

We received quite a number of comments and appeals from advisors advocating on behalf of 03-02-04 as an acceptable answer. Among the advisors who raised the issue were Ed Groth, Suzanne Antink, Michael Bartl, Scott Matthews, Bill Harrington, Tim Shafer, Matt Brown, Jon Mormino, Bill Gardner, Travis Boop, Paul Kustos, Ted Heavenrich, Kaleb Allinson, and Joe Griesbach. After much consideration, this appeal has been accepted. Math professors Brian Conrad of Stanford and Keith Conrad of the University of Connecticut both reviewed the appeals and both felt (without discussion with each other) that we should accept 03-02-04 based on confusion presented by the word "consists" in the question. This was supposed to be the easiest question on Contest #2. Many students said that 03-02-04 "consists" of 3 consecutive integers, albeit not in consecutive order. The question was not clear to those students, so they answered a question based on a valid alternate interpretation of the question. Appeal was also made on behalf of the answer 12-13-11 by several advisors, including Chip Rollinson, Suzanne Antink, David Doster, Doug Troutner, and Carolyn Knapp. This appeal is denied; even when considered to be three consecutive integers whose sum is a perfect square, there is no interpretation under which 12-13-11 would be the FIRST date after 02-03-04, as required by the question. One advisor appealed on behalf of the answer 04-05-06, but that appeal is denied for several reasons, including that the sum of those integers is not a perfect square.

■ **Question 2-5: Comment and Alternate Solution**

Jeri Monthie said, "Question 2-5 was worded poorly and was very misleading." Scott Berger submitted a student's alternate to the solution given in the note on the solution sheet. " $98 + x + y = xy$ . Add 1 to each side (and subtract  $x + y$ ):  $98 + 1 = xy - x - y + 1$ . Factor:  $99 = (x - 1)(y - 1)$ . There are only three distinct pairs multiplying to 99: {1, 99} and {3, 33} and {9, 11}. The corresponding solutions are {2, 100}, {4, 34}, and {10, 12}."

■ **Question 2-6: Alternate Solution**

Bruce Bartholomew submitted a student's incredibly straightforward alternate solution to Question 2-6. "One solver made the observation that if ABCDE is a regular pentagon, then quadrilateral ABCD meets the conditions given in the problem. The interior angle of a regular pentagon is 108 degrees."

Statistics / Contest #2			
Prob #, % Correct (all reported scores)			
2-1	82%	2-4	21%
2-2	77%	2-5	29%
2-3	41%	2-6	13%