



# 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.

■ **Our Internet Score Center** All students whose scores you report must have been tested at exactly the same time. Don't list students from any later class period. Instructions for submitting scores appear on each contest envelope. Scores you enter may be reviewed at any time by returning to the Internet Score Center. About 3 weeks after a contest, scores appear on our Web site, [www.mathleague.com](http://www.mathleague.com). Late scores must be accompanied by a brief explanation of the reason for lateness.

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

■ **Contest Dates** Future HS contest dates (and alternate dates), all Tuesdays, are Nov 18 (11), Dec 16 (9), Jan 13 (6), Feb 24 (17), & Mar 24 (17). (Each alternate date is the preceding Tuesday.) For vacations, special testing days, or other *known* disruptions of the normal school day, please *give the contest on an earlier date*. 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.

■ **Not Yet Received Your HS Contest Package?** Phone 1-201-568-6328 so we can reship. If you just recently got the contests, *please take Contest #1 as soon as possible, even if it's late!*

■ **Carefully Check Your Contest Package** Without opening any contest envelope, please check that the remaining envelopes are numbered 2, 3, 4, 5, and 6. If you're missing a contest envelope, e-mail [dan@mathleague.com](mailto:dan@mathleague.com) with your name, the school's name, the full school address, and the number of the contest envelope you're missing. We'll mail you another set of contests right away.

■ **Eligibility Rules** Only students officially registered as students at your school may participate. That's our rule.

■ **Authentication of Scores** To give credibility to our results, we authenticate scores high enough to win recognition. Awards indicate compliance with our rules. Please have students read the *Selected Math League Rules* on the back of this sheet and then sign a sheet to confirm knowledge of the rules. *Keep* the signed copies. Do *not* send them to us unless we request authentication from you.

■ **General Comments About the Contest** Sue Doker said, "Thanks for a great first contest. The first time participants were very engaged and enthusiastic! This was a good way to start off the Math League year." Linda Muratore said, "Thank you for a great 1st contest. We are looking forward to another exciting year." Adele Fielding said, "There were some very nice, relatively simple problems here, well within reach of many Algebra 2 students. Thank you." Debbie Battaglia said, "A nice selection of questions for a first contest. It gave all participants some measure of success and thus promoted much enthusiasm. Also it led to discussion for the need to observe the wording of problems; for example, a student did not receive credit for #1-5 because he did not use integral coefficients." Mary E. Cote said, "Thank you for always providing a contest on which all students can succeed in getting some correct answers. It is a great contest." Susan Holloway said, "Great start! Even though our scores might not reflect it, all questions were approachable for all students." Sal Muciño said, "Students were pleasantly surprised

by the difficulty of the examination. We also enjoyed the pizza we had afterwards. We look forward to the next month's test." Ginny Magid said, "Thanks for a great contest. It was accessible to kids at all levels." Patricia Waddell said, "The students enjoyed the test." Cyndee Hudson said, "Great topics! Covered the gamut for grades nine through twelve. Everyone could participate and do well. Thanks." John Kunz said, "Good start to another year!!" Paulette Sirakos said, "Great test!" Keith Calkans said, "An excellent mix of questions resulting in good scores for the first contest. Twin freshmen each got 4's, but betwixt them answered them all correctly!" Maria Gale thought it was a good first contest, though she wasn't as enthusiastic about question 1-5. Brian McBain suggested that perhaps the first two questions of the first contest should be easier, and said, "Personally I really enjoyed the contest, especially question #5! It is rare that the kids get a chance to see that type of factoring." Bev Hitchman had 96 students take the contest – excellent work, Bev!

■ **Problem 1-1: Alternate Solutions** Bain Cameron suggested alternate solutions to several of our problems. He had two for 1-1: "Write the polynomials in standard form by multiplying the factors.  $(x - 1)(y - 1) = xy - x - y + 1$  and  $(1 - x)(1 - y) = 1 - y - x + xy$ . As these are equivalent, the value in question must be 2008. By simply finding a pair of factors of 2008 ... a solution  $(x, y)$  may be determined.  $2(1004) = (3 - 1)(1005 - 1)$ , so  $(x, y) = (3, 1005)$  Thus  $(1 - x)(1 - y) = (1 - 3)(1 - 1005) = (-2)(-1004) = 2008$ , and similarly for any other suitable  $(x, y)$ ." Thanks for the alternatives, Bain!

■ **Problem 1-2: Comment** Some advisors noted that there are other acceptable ways to express the correct answer. As always, any answer correct to 4 significant digits is acceptable. Thus, as Kevin Merrill noted, 7.071 is an acceptable answer in this case. In addition, Elena Acciaro asked, "Can I assume we are accepting  $5\sqrt{2}$  for this question?" Yes, Elena, you can indeed assume that. We accept all answers mathematically equal to the official answer.

■ **Problem 1-5: Comment** Quite a few of you expressed concern that this question was too easily solved using the TI-89 calculator. Dean Frederick, Leanne Branham, Rick Lee, James King, Laila Kalnins, and Keith Calkins, we hear you. We always strive to write questions that do not give students an advantage based on access to technology. In this case, we fell a little short of that goal, but we will be ever more vigilant in the future! This issue also led to many students writing a slightly different version of the correct answer, specifically  $-(-2x - 3y)(2x^2 + 2x - 3y)$ . John Failor, Jeff Marsh, and Jon Graetz all brought this to our attention, and yes, we are accepting it as a correct answer. On the other hand, Jon Graetz also "had one student read 'integral coefficients' to mean that every coefficient had to be an integral! So he dutifully wrote out integrals for each monomial (e.g.  $\int(2dx)$  instead of  $2x$ ), correctly getting each one, in addition to factoring without a calculator." While that is an impressive undertaking by the student, we will not be able to award credit for that answer. The constant of integration interferes, and ignoring the constant is a BIG deal, as we all know.

## Statistics / Contest #1

Prob #, % Correct (all reported scores)

1-1	83%	1-4	63%
1-2	82%	1-5	28%
1-3	77%	1-6	24%