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.

■ **Online Score Reports: What to Do if the Mail is Late** Roughly 3 weeks after each contest, results appear on our web site, www.mathleague.com. Mailed score reports arrive after that.

■ **Send Your Comments** to comments@mathleague.com.

■ **Contest Dates** Future HS contest dates (and alternate dates), all Tuesdays, are Dec 15 (8), Jan 12 (5), Feb 23 (16), & Mar 23 (16). (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* 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.

■ **General Comments About the Contest** Shirley Mann said, "In general my kids thought this was tougher than Contest 1." Richard Serrao said, "A little tougher, but fair. As always a wonderful contest!" Lynette Quigley said, "The students thought today's questions were tougher than last month's. ... Keeps them thinking!!" Fred Harwood said, "Thank you for another contest that was accessible to a wide range of students." Keith Calkins said, "Interesting mix of questions." Suan Cantey said, "Argh! This was a tough one ... especially given the 1/2 hour time restraint." Lewis Davidson said, "Great contest, it stimulated our kids. Cheers." James Conlee said, "This contest was a nice marriage of algebra and geometry, making problems 1-5 accessible to most students."

■ **Question 2-2: Comment** Shirley Mann said, "Most of my students got 1 as one of their answers, but not the −1. They looked for the next positive integer which would work. A number of them came up with 5 which does not work since 17 × 27 = 629. (Therefore 629 is not a prime number.)"

■ **Question 2-4: Comments and Appeals (Accepted and Denied)** Many of our advisors wrote in to comment that the answer to this question could also be expressed as $14\sqrt{41}$, the most reduced form of $2\sqrt{2009}$. We accept any answer mathematically exactly equivalent to the correct answer, so either of these would be considered correct. Since it is mathematically correct when rounded to at least four significant digits, 89.64 would also be considered correct, as would 89.644. However, 89.6438 is incorrect since the final digit has been incorrectly rounded and thus is not mathematically accurate. Among those who brought up the issue were Lee Speers, Shirley Mann, Fred Harwood, Judith Wood-Blake, Cindy Rodgers, Elizabeth Dore, Mary Deal, Patricia Kassis, Dotty Dady, Jane Tallmadge, and Maureen Black. We hope at least some of you thought that our form of the answer was interesting given the short time remaining before the new year! Additionally, Bruce Akitt wrote in to ask, "I found some of my students getting the correct answer to #4, but their solution process showed no algebraic or reasoning process that would lead them to that answer. I wonder if other schools are looking at the process used or just the answer?" That's absolutely fine; in our short-answer math contests, only the final answer matters; even a correct guess gets full credit. Finally, Ginny Magid said, "Some of the kids were wondering whether 90 degrees was an acceptable answer ... This works only if you define a square as an isosceles trapezoid. Some books (and teachers) do so. Just wondering ..." Such a definition is non-standard, but more importantly it trivializes the question. A student must interpret the question in a way that does not trivialize it or possibly work on both interpretations, but will not get credit for a trivial interpretation alone.

■ **Question 2-5: Comment** Keith Calkins said, "I was disappointed that none of my students got 2-5 which to me was obviously part of a regular pentagon." Carl Clark perhaps summed it up by saying, "Question 5 was brutal."

■ **Question 2-6: Comments, Appeal (Denied) and Alternate Solution** Amy Kowatch asked, "Do all kids know how betting works?" Dana Rubin and Donald Brown submitted similar appeals for an answer of $75.51; Donald Brown sums up the basis of the appeal, saying "In every betting game I've seen, the amount an individual wins or loses is based on the amount he bets, not on the amount his opponent bets." This appeal is denied because the question sets forth different conditions from those assumed to get the alternate answer. Incidentally, the question's scenario is a common one; a person would typically have to bet more to win less when the person is betting on something considered the most likely outcome; this is commonly referred to as "giving odds" on the bet.

Finally, Stephen Gregory submitted student Dhroova Aiylam's clever alternate solution to the question: Let a = Al's original amount and b = Bo's original amount. Let A = what Al has left immediately after he bets and B = what Bo has left. Since they each bet the same fraction of their money, $A/B = a/b$. Also let M = the amount of money in the pot. Then $A + M = 2B$ and $B + M = 3A$; eliminating M, $2B–A = 3B–B$ and thus $A/B = 3/4 = a/b$; thus $a = (3/7)(168) = 72$.

Statistics / Contest #2

Prob #, % Correct (*all reported scores)*

2-1	92%	2-4	61%
2-2	61%	2-5	17%
2-3	67%	2-6	16%