



# 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.

■ **Use the Internet to View Scores or Send Comments** Just go to <http://www.mathleague.com> and look around!

■ **Upcoming Contests & Rescheduling Contests** Upcoming contest dates are March 8 and April 5. Our annual *Algebra Course I Contest* is held in mid-April. If circumstances (such as **vacations, school closings, or special testing days**) require it, you may give the contest on another date. Late scores? Please attach a brief explanation, or your scores may be considered unofficial.

■ **2005-2006 Contest Dates** Next year's contest dates (and alternate dates), all Tuesdays, are: Oct. 25 (18), Nov. 29 (22), Jan. 10 (3), Feb. 14 (7), Mar. 14 (7), and Apr. 11 (4). If you have a conflict (such as the AMC or scheduled statewide testing), it's a good idea to put the alternate date on your calendar now.

■ **What Do We Publish?** Did we forget to mention your name? *We use everything we have at the time we write the newsletter.* But the newsletter is the 1st thing we prepare, so we may use your score report and not your solution. *We try to be efficient!* Sorry to those whose solutions were too "late" to use in our newsletter.

■ **Contest Books Make A Great Resource** Have you seen our books of past contests? Many kids love to work on past contests. We've enclosed a flyer if you want to order books from us.

■ **General Comments About Contest #4:** Lenora Murray said "interesting test" and "most of the problems were easy; only one was a challenge for my top students." She asked how students can best prepare for non-traditional problems. Google the words "math" & SSTP" to see some great summer math programs. Gail Ellenbaum said most kids got the first 5 quickly. Scott Byerly said "Seemed very easy. All scored 3, 4, or 5." Paul Arrigotti said "This is usually the hardest contest. This year it was the easiest." Alison Kenefick said "We love the contests!" Larry Puetz said "5 ridiculously trivial problems followed by a real burner" is less preferable than a variety of difficulty levels. Problem 4-5 was much less difficult than we thought it would be. Bob Smith said "great questions."

■ **Problem 4-1: Comment** Mike Buonviri said upper level students who wrote  $\pm 2500$  "need to practice active reading."

■ **Problem 4-2: Comment** Paul Arrigotti said #4-2 "was too easy" for a high school contest problem.

■ **Problem 4-4: A GREAT Alt Sol & An Appeal (Denied)** Bob Smith said "The problem I really enjoyed was number 4. It was a great question, very different, and could be solved with algebra or logic. Al is 10 cents short, and pooling resources does not help, so Pat has *at most* 9¢. This is 15¢ short of the 24¢ price of gum. One student appealed for the answer  $24.\bar{9}$ . Mathematically,  $24.\bar{9}$  is *exactly* equal to 25. Yes, *exactly*. The appeal was denied.

■ **Problem 4-5: Comments & Alt Sols.** Robert Nielson said answers of small magnitude in scientific notation were given instead of 0. That's calculator use without thinking! Lynn Burmeister said "I bet you know that 4-5 can be answered on a graphing calculator." Student Sagar Karri sent an algebraic solution to 4-5. Student Rowan Hale reasoned brilliantly: Since  $1/2 + 2/3 = 7/6$ , the left side is  $7/6$  when  $x^2 + 2x = 0$ . Therefore,  $x = 0, -2$ . Bob Smith said 4-5 is "a very nice problem. A couple of students guessed and checked by matching the few simple fractions which add to  $7/6$ ." Paul Arrigotti said 4-5 "was easily guessed. It would have helped if the answers were irrational or imaginary."

■ **Problem 4-6: Comments & a Sol To a Similar Prob** Several advisors wrote to ask for further information about the solution to this problem. A similar (albeit, more difficult) problem was the first question on the 1999 Putnam Examination, which is a collegiate competition. I have prepared that problem and its solution as a PDF file which I can email to anyone who wishes to study a similar problem with a very complete solution. This may help you to understand some of the complexities of our problem. Write to [Steve@mathleague.com](mailto:Steve@mathleague.com) Ask me for the PDF file for #4-6.

## Statistics / Contest #4

Prob #, % Correct (top 5 each school)

4-1	94%	4-4	93%
4-2	98%	4-5	75%
4-3	95%	4-6	6½%