



# 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! David Abineri found the Web site “a very fast and efficient way to report scores.” He also commented that “Perhaps not everyone knows that the space bar toggles a radio button; so, for someone with a score of 6, one just touches space tab space tab space tab tab, etc. Keep the Web site, please.” We certainly intend to, David!

■ **Future Contest Dates and our Algebra Contest**

Our final contest is Apr. 9. This is the 9th year of our annual April *Algebra Course I Contest*. To participate, write for information.

■ **Rescheduling A Contest & Mailing Results**

If there’s a schedule difficulty, note that, when “school closings or testing days” so require, our rules allow you to use an alternate contest date. We prefer that you use the **previous week**, so we get the results on time. Mail scores by Friday of the official contest week. If scores are late for due cause, attach a brief explanation. Late scores unaccompanied by such an explanation are not normally accepted.

■ **Next Year’s Contest Dates**

The contests are all on Tuesdays: Oct. 29, Dec. 3, Jan. 7, Feb. 4, Mar. 4, and Apr. 8. We also sponsor contests for grades 4, 5, 6, 7, 8 and *Algebra Course I*. Use the enclosed form for any contest or for **books of past contests**.

■ **End-of-Year Awards**

Engraving of awards begins Apr. 22. We give plaques to the highest scoring school in each region and to the 2 schools and 2 students with the highest totals in the entire League. *Winning schools must postmark their results by March 23*. Results postmarked later *cannot* be used to determine winners. Bruce Olson asked “Has there been any thought to using enrollment figured to divide the schools into divisions? Personally, I do not care if we ever receive any team recognition, as my students enjoy the mathematical challenges provided.” Our groupings do not “even out” the competition. Competition is only one feature of our academic enrichment activity, not its most important one. Enrichment is the goal, since few school can expect to win.

■ **High Scoring Students & The Cumulative Column**

Completion of the cumulative column is optional, but student awards are based only on scores *regularly* listed in that column. On the most recent score reports, some cumulative scores were reported for students for whom scores were not reported for every prior contest. We are unable to verify these cumulative scores, so we must treat them as *unofficial*. If this affects one of your students, please contact us *promptly*. Note that student certificates of merit were enclosed with Contest 5 for your school’s high scorers.

■ **Calculator Comments**

Dr. Mark Nandor said that problems 1-6 and 4-4 both really required a calculator. He said “it’s a shame

that the contest allows calculators at all—but it’s a travesty that there are actually problems where you **NEED** a calculator.”

■ **General Comments About Contest 5**

H. Weiner’s students said that “this was the most difficult set.” Not one of his students was successful with either 5-4 or 5-6. Bob Smith wrote “Wow, what a confidence builder for me anyway. I answered all 6 correctly in 20 mins. I often have trouble getting #6 without some silly error. Number 6 is very simple, but unfamiliar to students. It demonstrates the need for students to see and attempt unfamiliar problems in mathematics. Thanks for another great contest. Mathematics teachers appreciate the work you guys do.” Suzie Moll wrote “the overall opinion was that this was the hardest contest yet. They got bogged down on 5-4 and 5-6. Seeing your solution to 5-6, it was a really neat problem, but that approach did not cross my mind or theirs. Keep up the good work.” Michael Buondiri “thought this was more do-able than many, so I was surprised by our lower-than-average scores.” Dave Ollar said contest 5 was “definitely the hardest of the year, but great problems.” Greg Mongold said “our team suffered meltdown, but we still had fun!” Melinda Michale said “Thanks, great contest.”

■ **Problem 5-2: Comment**

Ron Belak said “Thanks for 5-2. The straight-forward Venn Diagram is appreciated by every student who participates but gets few problems correct.”

■ **Problem 5-4: Alternate Solution**

Dick Olsen noted that if  $x = 2r$  in the 2nd equation we get  $8r^3 + 4ar^2 + 2br + c = 0$ . Letting  $x = r$  in the 1st equation,  $r^3 + 6r^2 + 4r + 2 = 0$ . Subtracting,  $7r^3 + (4a-6)r^2 + (2b-4)r + (c-2) = 0 = 7(0) = 7(r^3 + 6r^2 + 4r + 2) = 7r^3 + 42r^2 + 28r + 14$ . Equating coefficients,  $4a-6 = 42$ , so  $a = 12$ ;  $2b-4 = 28$ , so  $b = 16$ ;  $c-2 = 14$ , so  $c = 16$ .

■ **Problem 5-5: Appeal (Denied)**

An appeal claimed that “the question should read ‘least ordered pair’ or something to that effect. Otherwise, there are an infinite number of possibilities, such as (16/9,64/27), (25/16,125/64), etc.” *This is false*. Using the 2nd pair,  $(\log A)/(\log B) = [\log (25/16)]/[\log (125/64)] = 2(\log 5 - \log 4)/3(\log 5 - \log 4) = 2/3 \neq (25/16)/(125/64) = A/B = 4/5$ .

■ **Problem 5-6: Comment**

Michael Buondiri “especially enjoyed 5-6. It opens the door as a topical problem I can use on my next pre-calculus and calculus tests. Thanks for the new idea!

**Statistics / Contest #5**  
 Prob #, % Correct (top 5 each school)

5-1	81%	5-4	29%
5-2	95%	5-5	44%
5-3	92%	5-6	10%