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** to comments@mathleague.com. You can see your results at *www.mathleague.com*!

■ **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.

■ **Dates of Final HS Contest and Algebra Contest** Our final contest of this school year is March 11 (with an alternate date of March 18). In addition, this year happens to be the 20th year of our annual April *Algebra Course I* contest. There's still time for your school to register! Go to **www.mathleague.com**.

■ **2014-2015 Contest Dates** We schedule the six contests to be held four weeks apart (mostly) and to end in March. Next year's contest (and alternate) dates, all Tuesdays, are October 14 (Oct. 21), November 11 (Nov. 18), December 9 (Dec. 16), January 13 (Jan. 20), February 10 (Feb. 17), and March 17 (Mar. 24). Have a testing or other conflict? Now is a good time to put an alternate date on calendar!

■ **Rescheduling a Contest and Submitting Results** Do you have a scheduling problem? If school closings **or testing days** mandate contest rescheduling, our rules permit you to use an alternate contest date. Try to give the contest the week after the regularly scheduled date. If scores are late, attach a brief explanation. Late scores unaccompanied by such an explanation will not be accepted.

■ **End-of-Year Awards** Engraving of awards begins March 22nd. We give plaques to the highest-scoring school in each region and to the 2 schools and the 2 students with the highest totals in the entire League. *Winning schools must submit their results to our Internet Score Report Center by Match 21st.* Results submitted later *cannot* be used to determine winners. A teacher once asked, "*Has there been any thought to using enrollment figures to divide the schools into two divisions? Personally, I don't care whether we ever receive any team recognition, as my students enjoy the mathematical challenges provided.*" Our groupings are not organized to "even out" the competition. Competition is one feature of our academic enrichment activity, but enrichment should be the main goal. Only a few schools can expect to win, but all schools can profit.

■ **General Comments About Contest #5:** Ed Rollman said, "Each year, I look forward to the 'style' and variety of questions that you bring to our contestants. Thanks for doing this. Fred Harwood said, "We needed to write on the 18th as the students were off . . . on the 11th. The few kids that showed today thought this contest was tougher than the others." Kipp Johnson said, "It was brutal! Our highest score was 4. One of the kids said afterwards that whoever writes the questions likes to put something in that makes you think it's a crazy question, but when you figure it out it's the key to the whole thing. He was referring to the garbage dump one. You had me going on that one for a while too! Keep up the good work." Mark Luce said, "I thought my students would do better on this contest. I thought the first three problems were relatively easy, compared to past contests. But several of my students misread problems 2 and 3. Some thought that it HAD to be the SAME quadrilateral in problem 3, for instance. I like problem 5: a good and clever algebra problem. None of my students were able to wend their way through problem 6." Dick Gibbs said, "I really liked Contest #5. I was too quick to guess and missed 5-3! 5-4 had me a bit stymied because I wasn't sure about the use of 'also' ~ but only one interpretation worked. 5-6 was a great algebra exercise."

■ **Question 5-2: Appeal (Rejected)** Benjamin Dillon appealed on behalf of students who put "no difference," on the grounds that such a response indicated a clear knowledge of the answer if not of the vocabulary word "difference." While we understand the desire to reward students who may have understood the question in general, we cannot give credit for this response. As teachers, we operate one way. As contest graders, we operate differently. If this question were on a school examination, one might speak with the student, asking for an explanation of the reasoning behind the answer, then ask the student to read the question again and give a mathematical answer. Assuming the student then answered correctly, it would be a teachable moment, and credit might be given for "just one time." But this is a contest, and not a class test; the answer "no difference" is not a mathematical answer, so no credit can be awarded.

■ **Question 5-5: Appeals (Rejected)** Rosa McCullagh appealed on behalf of a student who wrote "-2, 2, -2i, 2i, 2/i, and –2/i" as the answer. Since 2/i and –2/i are not required to be roots, the answer is incorrect. Benjamin Dillon appealed on behalf of students who listed the three other roots without listing 2. Once again, although such responses do indicate a good general understanding of the question, they are not correct and no credit can be given. In 5-5, the question calls for "ALL numbers, real or imaginary" that are roots (emphasis added), and even states "(including 2)." The question thus CLEARLY requires that a 2 be listed among the answers. Failure to do so means that the correct answer has not been given. Susan Antink appealed on behalf of an answer of only the roots 2 and 2i, reasoning that with a polynomial such as $(x – 2)(x – 2i)$ the roots wouldn't have to occur in pairs. Unfortunately for the appeal, as pointed out by Professor Brian Conrad of Stanford University, the proposed polynomial $(x – 2)(x – 2i)$ does not satisfy the condition of the question that $P(z) = P(iz)$. As with the other appeals mentioned, no credit can be given.

Statistics / Contest #5
Prob #, % Correct (*all reported scores*)

Prob #	% Correct	Prob #	% Correct
5-1	92%	5-4	52%
5-2	62%	5-5	20%
5-3	32%	5-6	4%