



Math League News

■ **Use the Internet to View Scores or Send Comments** to comments@mathleague.com.

■ **Contest Registration and Books of Past Contests** Register for next year by mail or on the internet right now! Renew now so you don't forget later! *You may ask us to bill you this fall.* We sponsor an *Algebra Course I Contest* and contests for grades 4, 5, 6, 7, and 8. Use the registration form enclosed with Contest #6 to register for contests or to **Order Books of Past Contests**.

■ **2019-2020 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 15 (Oct. 22), November 12 (Nov. 19), December 10 (Dec. 17), January 7 (Jan. 14), February 11 (Feb. 18), and March 17 (Mar. 24). *Do you have a testing or other conflict?* If so, right now is a good time to put the alternate date on your calendar!

■ **Test Security Procedures** Students are expected to sign the honor pledge posted on our website, affirming that they "will neither give nor receive help with any of the Math League Contest questions either before or during any of the Math League Contests." Of course, in the end contest security is really a cooperative effort. Schools should do whatever they can to prevent premature disclosure of questions and/or answers. For our part, we are always monitoring the results for any suspicious outcomes, which we then investigate thoroughly.

■ **End-of-Year Awards and Certificates** Symbols identify winners. We ship plaques to the advisors. Errors? Write to *Math Plaques, P.O. Box 17, Tenafly, NJ 07670-0017*. Identify the award, contest level, your name, and the school's name and address. The envelope for Contest #5 contained Certificates of Merit for the highest scoring students overall and in each grade for the year. Do you need extra certificates for ties? If so, send a **self-addressed, stamped envelope large enough to hold certificates (you need to use *TRIPLE* postage)** to *Certificates, P.O. Box 17, Tenafly, NJ 07670-0017*. (Please allow one week.)

■ **General Comments About the Contest (and the Year)** Tim Baumgartner said, "Thank you for another year of your amazingly interesting problems!" Timothy Smith said, "Thanks for a great year!" Robert Hess said, "We really enjoyed the format and it gave our school (and team) a lot more flexibility than we were used to in our other math league. Many thanks!!" Eric Steadman said, "Thank you for organizing these – the students really enjoy them!" Chip Rollinson said, "Nice set of questions." Chuck Garner said, "Thanks...for all the problems over the years! I actively promote Math League to any math teacher/math team sponsor in my state as one of the best contests anywhere."

■ **Question 6-2: Comment** Travis Bower said, "I had quite a few think 1 was a prime number."

■ **Question 6-5: Appeal (Rejected)** Eric Steadman appealed on behalf of a student who wrote an alternate form of the answer, saying "A freshman answered $(-30,30),(30,-30)$. I presume that should be marked wrong, and I marked it wrong, but I just want to make sure with you." Because the question specified that the answer was to be given in radian measures, this student's answer was indeed an incorrect answer and the adviser was correct not to give credit for it.

■ **Question 6-6: Comments and Appeal (Rejected)** Several advisers, including Benjamin Dillon, Chuck Garner, and Chip Rollinson, and at least one student commented that the wording of Question 6-6 was not as clear as it could have been. Some thought that the first sentence could be interpreted as referring to 3 specific chords of all the possible chords that could be drawn. Some felt that the question seemed to imply that the triangles would be composed of entire chords and not just line segments that were portions of the chords. Of course, since chords by definition have endpoints on the circle, no triangles could be formed from chords without having vertices on the circle. As a result, some students answered 0 to this question, and appeals on behalf of this answer were submitted. Credit cannot be given for this answer, however. As our appeals philosophy states, when trivial and non-trivial solutions are available for a question, it is the problem solver's responsibility to focus on the non-trivial solutions. This appeal was denied by Professor Brian Conrad of the Mathematics Department of Stanford University. However, to avoid possible misinterpretation future printings of this question will be reworded as follows: "Choose 10 points on a circle so that no 3 chords with endpoints among these 10 points are ever concurrent interior to the circle. If chords join all pairs of these points, how many different triangles are formed that have their sides on these chords and their vertices interior to the circle at points of intersection of these chords?"

Statistics / Contest #6

Prob #, % Correct (all reported scores)

6-1	88%	6-4	50%
6-2	51%	6-5	22%
6-3	78%	6-6	6%