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. At www.mathleague.com, you can view scores before they arrive in the mail!

■ **Dates of Final HS Contest & Algebra Contest** Our final contest of this school year is March 18. This is the 14th year of our annual April *Algebra Course I Contest*. There's still time for your school to register. Go to **www.mathleague.com**.

■ **2008-2009 Contest Dates** The good news is that our Internet Score Report Center allows us to move contest dates forward. We schedule the 6 contests to be held 4 weeks apart (mostly), and to end in March. Next year's contest (and alternate) dates, all Tuesdays, are: Oct. 21 (14), Nov. 18 (11), Dec. 16 (9), Jan. 13 (6), Feb. 24 (17), Mar. 24 (17). If you have a testing or other conflict, right now is a good time to put an alternate date on your calendar! Dennis Kunimura said "Our school loves the accelerated schedule and hope that you will continue this into the future." Harry Sirokman strongly prefers 3 contests each semester.

■ **Rescheduling A Contest & 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 our contest the **previous week**, so the results can still submitted on time. Report your scores by Friday of the official contest week. If scores are late, attach a brief explanation. Late scores unaccompanied by such an explanation are not accepted.

■ **End-of-Year Awards** Engraving of awards begins March 25. 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 submit their results to our Internet Score Report Center by March 25.* 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 divisions? Personally, I do not care if 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.

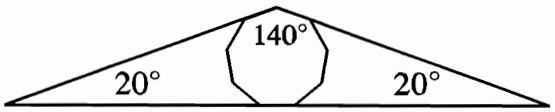
■ **The Math League Internet Score Report Center** Joan Seitz said "I love entering data as fast as I can type."

■ **General Comments** Christine Tsou wishes our Certificates of Merit were twice as large. Jack Siderer said "some questions are more manageable but still challenging." Cameron Milner said it was "an excellent contest, as usual." Charles Sturtevant wrote "This is the way a contest should be. It covered a number of areas and could be done without a calculator." Albert Roos said "We love math!"

■ **Problem 5-1: A Comment** Bain Cameron liked #5-1 very much, but not on a contest that allows calculators.

■ **Problem 5-4: Alt Sols. & 2 Appeals**
Student Becky Garland mirrored the construction and got:

Each interior angle is 140°



Manual Ung drew a line through the apex parallel to the base. He used alternate interior angles. Jason Yoder Rupp asked "Are you accepting 20 as well as 20°?" *Yes*! An appeal for the answer pair of "20° and 40°" claimed that the comma, followed by the word "which," made it seem that we were asking for two different angle-measures. This appeal was denied by Prof. Brian Conrad, Math Dept., University of Michigan, who ruled that #5-4 asked for only one.

■ **Problem 5-5: Appeal (Accepted)** Cindy Wilker asked if "2/26" should get credit. *Yes, it should!*

■ **Problem 5-6: Alt. Sols & an Appeal (denied)**
There were numerous questions about whether or not credit should be awarded for the answer $4<x<9$. *Credit should not be given* for that answer unless it was accompanied by the phrase "and x is an integer." We defined x as a positive real number, since x was the length of a median. Our question asked for integer values possible for x, and the unrestricted inequality is satisfied by many non-integer values of x. Don Barry said that asking for a list of answers would have obviated that error. Laurie Bass put the problem on a grid, and then used coordinate geometry. Joye Walker used the Law of Cosines twice, once on each of the supplementary angles in the resulting figure. Titu Andreescu told Dick Gibbs that $(\text{median to } c)^2 = (a^2+b^2)/2 - (c/2)^2$. [Here, $8 < c < 18$.] Student Dillan Rathke, and advisors Susan Cantey, Ben Hedrick, and Fred Harwood, applied the triangle inequality to the extreme values of c to determine the bounds.

Statistics / Contest #5

Prob #, % Correct (all reported scores)

5–1	91%	5–4	58%
5–2	73%	5–5	31%
5–3	68%	5–6	12%