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.

■ **Send Your Comments** to comments@mathleague.com. View results at www.themathleague.com before they arrive in the mail.

■ **Upcoming Contest Dates & Rescheduling Contests** Future HS contest dates (and alternate dates), all Tuesdays, are Jan 13 (20), Feb 10 (17), & Mar 10 (17). (Each alternate date is the following Tuesday.) If vacations, school closings, or special testing days interfere, please reschedule the contest. Attach a brief explanation, or scores may be considered unofficial. We sponsor an *Algebra Course I Contest* in April, and contests for grades 4, 5, 6, 7, and 8. Get information and sample contests at *www.themathleague.com*.

■ **T-Shirts Anyone?** We're often asked, "are T-shirts available? The logo lets us recognize fellow competitors!" Good news — we have MATH T-shirts in a variety of sizes at a **very** low price. Use them as prizes for high or even perfect scores, or just to foster a sense of team spirit! The shirts are of grey material and feature a small, dark blue logo in the "alligator region." A photo of the shirt is available at our website. There's one low shipping charge per order, regardless of order size. To order, use our website, www.themathleague.com.

■ **Online Practive Materials** We have online versions of ALL of our prior contests for grades 4, 5, 6, 7, and 8 as well as our Algebra and High School contests available now, including last year's contests. These materials allow your students to practice online using any of the contests that we published prior to this school year. You may order this online access from our website, www.mathleague.com. The fee for this online access to **all** past contests at any selected grade level for **all** students at a given school is available for the low, low price of only $9.95 for the year!

■ **Administer This Year's Contests Online** Any school that is registered for any of our contests for the 2025-2026 school year may now register at www.online.mathleague.com for the 2025-2026 Online Contests at no cost. The advantages of administering the online versions of our contests rather than the paper and pencil ones are that you do not have to grade your students' papers and that you do not have to submit any scores at our Score Report Center – these tasks are done automatically for you when your students take our contests online. If you decide to use this free service, you must set up your account and set the day you are going to administer each contest at least one day in advance of the actual contest date.

■ **Students Hungry for More?** Don't forget, we do offer the *Algebra Course 1 Contest* in April!

■ **Contest Dates for 2026-2027 and Alternate Dates:** HS contest dates for the next school year (and alternate dates), all Tuesdays, are October 20, 2026 (October 27), November 17, 2026 (November 24), December 15, 2026 (December 22), January 12, 2027 (January 19), February 9, 2027 (February 16), and March 16, 2027 (March 23). Please note that each alternate date is the Tuesday **following** the official date!

■ **General Comments About Contest #3:** Jenilia Kostko said, "My students and I love doing and discussing this contest. Thank you for consistently generating such great problem sets." Amy Hogan said, "A tougher contest than usual, but overall nice problems." Catherine VanNetta said, "A geometry lover's delight...We hope the whole contest writing team has a great holiday season! Thanks for all you do to keep us thinking!"

■ **Question 3-1: Appeal (Rejected):** Jon Graetz and Brian Sterr appealed on behalf of students who answered "0" to question 3-1. As Brian put it, "A couple of my students interpreted Question 1 as allowing degenerate circles, as they also would have an 'integral multiple of pi' for their circumference, namely 0. They answered 0 for the question." Unfortunately for the students who chose to interpret the question in this way, when there is both a trivial and a nontrivial interpretation to a question it is the problem solver's responsibility to solve the nontrivial interpretation of the question. For this reason, the appeal is denied. (Though a student who answer with both 0 and 1/2 would be given credit.)

■ **Question 3-3: Appeal (Accepted), Comment, and Alternate Solution:** Dean Ballard, Denes Jakob, Jenilia Kostko, Perry Page, and Shawn Predicala all appealed on behalf of students who had alternate answers to this question. The alternate answers are based on taking the three given vertices as consecutive, but not in the order given. Since the question didn't specify that the vertices are consecutive specifically in the order given, other orders are also acceptable and credit should be given to answers of (1096,1800) (as stated in our original solution), (1888,1752), and (2080,2250) as well. Dean Ballard said, "We also liked the use of significant dates for the given coordinates." Catherine VanNetta said that her students had an alternate solution: "All our students used the parallelogram attribute that opposite sides are parallel, computed the slope of a side, and used the slope they calculated to find the missing vertex on the opposite side."

■ **Question 3-4: Comment and Alternate Solution:** Robert Morewood said, "Most students found at least one of the solutions for 3-4...nice morale booster! An alternative solution for this would be 'Solve by Graphing,' trivial with a graphing calculator, or an interesting calculus problem." Similarly, Catherine VanNetta said, "Our student...solved both equations for y, entered the equations in the graphing calculator, and used the table and graph feature to identify the points of intersection."

■ **Question 3-5: Comment:** Robert Morewood said, "Probability strikes again! None of our students successfully solved 3-5, although several found the correct probability for shirts chosen WITHOUT replacement."

■ **Question 3-6: Comment and Alternate Solution:** Amy Hogan said, "I solved #6 by wishing my way into a 3-4-5 right triangle situation. My students think that was a little rash, but hey... I am not ashamed about it. Happy Holidays!" Robert Morewood said, "3-6 does admit a challenging alternate solution: Taking the angle, A, between the sides labelled 15 and 8, one can write the vector sum of the sides labelled 8, 7, and 16, which must equal the vector sum of the sides labelled 15 and *x*. The resulting equations CAN be solved, with some effort, to get $A = \cos^{-1}(4/5)$ and $x = 20$."

Statistics / Contest #3

Prob #, % Correct (*all reported scores*)

3-1	54%	3-4	44%
3-2	51%	3-5	21%
3-3	32%	3-6	21%