



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.

■ **Our Internet Score Center** All students who take the paper and pencil version of our contests and whose scores you report must have been tested at exactly the same time. Don't list students from any later class period. Instructions for submitting scores appear on each contest envelope. Scores you enter may be reviewed at any time by returning to the Internet Score Center. About 3 weeks after a contest, scores appear on our Web site, www.mathleague.com. Late scores must be accompanied by a brief explanation of the reason for lateness. Scores you enter may be reviewed at any time by returning to the Internet Score Center. About 3 weeks after a contest, scores appear on our Website, www.mathleague.com. Late scores must be accompanied by a brief explanation of the reason for lateness.

■ **Contest Dates** Future HS contest dates (and alternates), all Tuesdays, are November 11 (Nov. 18), December 9 (Dec. 16), January 13 (Jan. 20), February 10 (Feb. 17), and March 10 (Mar. 17). Please note that each alternate date is on the Tuesday following the official date!! For vacations, special testing days, or other *known* disruptions of the normal school day on a contest date, please *give the contest on the following Tuesday*. If your scores are late, meaning beyond the week of an alternate date listed above, please submit a brief explanation. We reserve the right to refuse late scores lacking an explanation. We sponsor an *Algebra Course I Contest* in April, as well as contests for grades 4, 5, 6, 7, & 8. See www.mathleague.com for information.

■ **Administer This Year's Contests Online** Any school that is registered for any of our contests for the 2025-2026 school year may register at <http://online.mathleague.com> for the 2025-2026 Online Contests at no cost. 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.

■ **Eligibility Rules** Only students officially registered as students at your school may participate. That's our rule.

■ **Authentication of Scores** To give credibility to our results, we authenticate scores high enough to win recognition. Awards indicate compliance with our rules. Please print the Selected Math League Rules (posted on the same page as this Newsletter) and have students read them and then sign them to confirm knowledge of the rules. *Keep* the signed sheets. Do *not* send them to us unless we request authentication from you.

■ **Past Contests Online** Teachers of any school registered for any of our 2025-2026 contests can now purchase online versions of the past contests for any selected grade (4th Grade through High School) for \$9.95 per grade level for use throughout this school year at <http://online.mathleague.com>. For this fee, all students in your school can take all the past contests for a specific grade online. We grade each contest for you, provide you with answers and solutions, and keep statistics on each student's performance.

■ **We Are on Facebook!** Like us at <https://www.facebook.com/TheMathLeagueInc>

■ **Send Your Comments** to comments@mathleague.com.

■ **General Comment About the Contest** Amy Hogan said, "Thanks for your hard work with this contest." Robert Morewood said, "Thanks for another interesting contest!" Richard Newcomb said, "Thanks for a great first problem set." Olivia Rea said, "Love the range of problems!" Kaleen Graessle said, "Thank you for all you do for this program." Catherine VanNetta said, "[We] really appreciate your thoughtful problem design. All of our students mentioned that they felt at least one problem was accessible to them, which made a huge difference in their experience. We truly appreciate the thinking opportunities you create for our students and the positive impact you've had in making this first contest such a great experience for our new participants."

■ **Question 1-2: Comment and Alternate Solution** Robert Morewood said, "Curiously, our students found #2 noticeably easier than #1. But not everyone did it the easy way! One of our senior students saw exponential functions and decided to take the logarithm (base 2) of both sides." That is certainly an alternative way to (eventually) see that the only possibility is that $x = 0$!

■ **Question 1-5: Comments and Appeal (accepted)** Mark Milner said, "None of our students managed to solve this problem despite its simplicity. The topic of probability has been completely removed from the precalculus stream in high schools and now only exists as a topic for Math clubs to tackle. So sad!!" Olivia Rea said, "I especially loved number 5 as a math teacher mom who rides a motor scooter." Richard Newcomb said, "Beautiful probability problem and solution! Only one of my students got it correct." We also heard from several advisors, including Dave Feinberg, Amy Hogan, Vandana Kadam, Peter Knapp, Ziwei Lu, Riyan Nayak, and Brian Sterr, who said their students found the wording of this question confusing in a number of different ways. Dave Feinberg appealed on behalf of a student who answered 9/605, an answer also flagged by Brian Sterr. This would be the correct answer if one assumed that at least one scooter remained after the departure of the last car, an interpretation that isn't unreasonable given the wording of the question, so the appeal is **ACCEPTED**. With that assumption, first determine the probability that a scooter is left in the lot after all the cars have left. That is the same as determining the probability that the last vehicle left in the lot is a scooter, or $150/270 = 5/9$. To calculate the conditional probability that A (mom's scooter remains in the lot) given B (at least one scooter remains in the lot after all cars depart), we want:
 $P(A|B) = P(A \cap B) / P(B)$
We know (from our given solution) that $P(A \cap B) = P(A) = 1/121$. So, since $P(B) = 5/9$, we get $P(A|B) = (1/121) / (5/9) = 9/605$.

Statistics / Contest #1

Prob #, % Correct (all reported scores)

1-1	70%	1-4	58%
1-2	77%	1-5	3%
1-3	22%	1-6	35%