

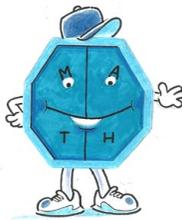


Math League News

■ **Our Calculator Rule** Our contests allow both the TI-89 and HP-48. You may use any calculator without a QWERTY keyboard.

■ **Our New Look!** Since its inception, Math League has been proud to feature the cartoons of Phil Frank on all of our contests. Those cartoons were instrumental in giving our contests that signature Math League look that we've all come to know and love. With that in mind, you know we would have to find someone truly special for us to want to switch to a new cartoonist. Well, we have found just such a person! Math League is thrilled to announce that future cartoons will be drawn by the very talented artist Marty Riskin. We are confident that the Math League community will love the skill and humor that Marty brings to his work. Welcome aboard, Marty!

■ **Name the Math League Mascot Contest** What better time could there be than at the inauguration of a new look to introduce a new mascot? Yes, Math League now has a mascot—but that mascot needs a name! We are turning to you, Math League community, to help us find the perfect name for our new friend. To show our appreciation to whoever supplies us with just the right name, we are running a contest and offering a prize of \$200 and any 7 Math League books to the winner! See our website at <https://mathleague.com> for all the details.



■ **Our Internet Score Center** All students 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.

■ **Administer This Year's Contests Online** Any school that is registered for any of our contests for the 2019-2020 school year may now register at <http://online.mathleague.com> for the 2019-2020 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.

■ **Past Contests Online** Teachers of any school registered for any of our 2019-2020 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.

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

■ **Contest Dates** Future HS contest dates (and alternates), all Tuesdays, are November 12 (Nov. 19), December 10 (Dec. 17), January 7 (Jan. 14), February 11 (Feb. 18), and March 17 (Mar. 24). 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, 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.

■ **Not Yet Received Your HS Contest Package?** E-mail dan@mathleague.com so we can reship. If you just recently got the contests, *please take Contest #1 as soon as possible, even if it's late!*

■ **Carefully Check Your Contest Package** Without opening any contest envelope, please check that the remaining envelopes are numbered 2, 3, 4, 5, and 6. If you're missing a contest envelope, e-mail dan@mathleague.com with your name, the school's name, the full school address, and the number of the contest envelope you're missing. We'll mail you another set of contests right away.

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

■ **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.

■ **General Comments About the Contest** Chip Rollinson said, "Nice set of problems for the first contest of the year." Tim Baumgartner said, "Hello and thanks for a fun contest!"

■ **Question 1-3: Comment** Robert Morewood said, "I particularly liked #3 as something that ALL my students might aspire to solving with suitable effort."

■ **Question 1-5 Comment** Robert Morewood said, "A special thanks for #5, giving me a chance to talk about the four-square theorem!"

■ **Question 1-6: Comments and Appeal (Denied)** Several advisers, including Stephanie Peters, Alun Roberts, and Chip Rollinson, commented that the wording of Question 1-6 wasn't as clear as it could have been. The issue, essentially, is whether the question allows for an interpretation that frames the situation as one of permutations rather than combinations. Along those lines, Kevin Ortwine submitted an appeal from one of his students for an alternate answer. Kevin's student said, "[P]roblem 6 leads to two possible interpretations, one resulting in the 'correct' answer of 66c3 and the other resulting in the common 'incorrect' answer of 64^3. The issue lies in that it didn't specify whether the pizzas were identical or not. On the one hand, 'different combinations' suggests that the pizzas are to be treated as identical and that order doesn't matter. On the other hand, the clarification that 'different pizzas need not have different toppings' suggests that different pizzas are to be treated differently - i.e. if the pizzas were to be numbered 1, 2, 3, and three topping schemes were A, B, C, then 1A 2B 3C would be treated as a different 'combination' as 1B 2C 3A. I feel like the word 'combination' alone is not enough to imply identity especially with the later usage of 'different pizzas'..." As this student acknowledges, the word "combination" has a very specific meaning in mathematics, and students are asked how many combinations of 3 of the pizzas are possible. The last sentence says different pizzas need not have different toppings; in this context, all that means is that two different (or 3 different) pizzas can have the same topping(s). This provision allows, for example, that all 3 pizzas could have only pepperoni; it doesn't mean that order matters.

Statistics / Contest #1			
Prob #, % Correct (all reported scores)			
1-1	78%	1-4	60%
1-2	82%	1-5	51%
1-3	38%	1-6	2%