

Massachusetts Association of  
Mathematics Leagues

**MAML**

INVITATION TO THE  
STATE CHAMPIONSHIP MEET

**Thursday, April 4, 2024**

WINCHESTER HIGH SCHOOL

and

WESTBOROUGH HIGH SCHOOL

Small, Medium, and Large Schools

Please Visit [www.maml.org](http://www.maml.org) to accept this  
invitation and to register for the  
competition.

## MASSACHUSETTS ASSOCIATION OF MATHEMATICS LEAGUES

Dear Advisor,

Congratulations, the MAML Selection Committee wishes to extend an invitation to \_\_\_\_\_ to participate in the Massachusetts State Invitational Math Team Competition to be held on April 4, 2024 at Winchester High School and Westborough High School.

Please visit [www.maml.org](http://www.maml.org) to register for the competition by Thursday, March 28, 2024.

*It is important for all advisors to read the following information regarding the time of arrival for all buses and/or vehicles with their mathletes for this year's state competition; all advisors and students should plan to arrive between 3:30 PM (no sooner) and 3:55 PM. Buses will then proceed to the parking area which should have ample spaces for all buses and vehicles. All students will report to the cafeteria and advisors will meet for the coaches meeting. We would like to have the initial information meeting begin as close to 3:45 PM as possible for both students and advisors.*

**Buses will drop off students at the main entrance. Buses will then proceed to park in the High School parking area.**

**This year each participating team must pay a \$85.00 fee. The check should be made payable to MAML and the due date is no later than April 4, 2024. There may be a late charge of \$25.00 after that date.**

The format for each of the three classes is enclosed along with the various categories. If your team is unable to compete, please inform a member of the Board of Directors immediately. This will be a tremendous help in our planning period. There will be three classes of competition: Large (L), Medium (M), and Small (S)

Total Enrollment in Grades 10,11,12	
Large	$LS \geq 850$
Medium	$450 \leq MS < 850$
Small	$SS < 450$

- I. Medium and Small School Teams.
  1. Six students to compete for each school.
    - a. Maximum of 3 seniors.
    - b. Maximum of 5 juniors and seniors combined.
  2. Each student will participate in three categories.
  3. Three students from each school will participate in each of the six categories.
  4. There will be a seventh category, TEAM ROUND. All six students participate.

## II. Large Schools

1. Eight students to compete for each school.
  - a. Maximum of 3 seniors.
  - b. Maximum of 6 juniors and seniors combined.
2. Each student participates in 3 categories.
3. Four students from each school will participate in each of the six categories.
4. There will be a seventh category, TEAM ROUND. All eight students participate.

III. A team selected for (M) or (S) competition may elect to participate in a larger class provided no team in its own league has a higher standing in that category and has not been invited to participate. An (L) team must participate in class (L).

## IV. Categories

1. Arithmetic (open), Elementary Number Theory.
2. Algebra (open, but restricted to real numbers and no transcendental functions).
3. Geometry (open, Plane, Synthetic).
4. Algebra (Logs, Exponential Functions, Algebraic Functions).
5. Analytic Geometry (open).
6. Trigonometry and Complex Numbers.
7. Team (restricted to courses which cover topics in Rounds 1-6).

V. Each individual round will contain 3 questions worth 1 point, 2 points, and 3 points. Ten minutes for each category

VI. TEAM ROUND: 12 minutes. There will be six questions asked on the topics named. The total number of points for the team round will be 24 points for class (L) and 18 points for class (M) or (S).

- VII. There will be three team awards for each class. In addition, each individual on these winning teams will receive awards. High Scoring Students for the meet will receive awards at the conclusion of the meet. The team awards may be distributed either at the conclusion of the meet or at a later date to be decided.
- VIII. Students must be informed that they are to stay in the area designated for them or lose their chance to compete.
- IX. The selection of the teams for the New England Math Team Competition will be based upon the performance at the State Tournament. At least four Large schools, three Medium schools, and two Small schools will be selected to represent Massachusetts in the New England Tournament. The overall league champion from every league is automatically invited to attend the New England Meet. In the event the overall champion does not compete, the runner-up may replace that team in order to insure each league at least one representative to the New England Meet. The New England Meet will be held on Friday, April 26<sup>th</sup>, 2024 at CANTON High School.
- X. If anyone has questions regarding the competition, please contact Michael Curry.
- XI. This year the individual team roster is included and should be filled out prior to your arrival. Students should be listed by classes, seniors first, etc. We will collect these at the meeting. An example of a team roster is included in the packet.
- XIV. A sheet pertaining to information about the team and advisor should be filled out and turned in at the meeting.
- XV. Be sure to show the information sheet enclosed regarding this competition to every student.

**XVI. NO USE OF CALCULATORS IS ALLOWED.**

**XVII. NO POSTGRADUATES ARE ELIGIBLE TO PARTICIPATE IN THE STATE MATH TEAM COMPETITION.**

**XVIII. DURING THE COMPETITION, NO COACH IS TO HAVE CONTACT WITH HIS OR HER STUDENTS EXCEPT IN CASE OF AN EMERGENCY.**

# Massachusetts Association of Mathematics

Leagues

MAML

School \_\_\_\_\_

Address \_\_\_\_\_

—

Primary Contact \_\_\_\_\_

Registration fee for participation in the state meet sponsored by MAML: \$85.00

Please make check payable to MAML and mail to:

Beth Blumberg  
6 Garfield Drive  
Westborough, MA 01581

Please identify the school on the check (or with attached paperwork)!

**Payment is due on or before April 4, 2024**

**PAYMENT RECEIVED From :**

## **STUDENT INFORMATION FOR STATE COMPETITION**

**Please show to each student who will participate in the contest.**

1. Each student will write his/her name, school, and grade on the back of the white exam sheet.
2. You are not to pick up the exam sheet or try to read the problems in any way prior to the starter giving the signal to begin.
3. You have ten minutes to answer the three questions. Remember the first question is worth one point, the second, two points, and the third, three points. You will be given a two minute and a 15 second warning signal. That is, you will be told when there is only two minutes left and when there is only 15 seconds left in the round.
4. When the signal to stop is given, everyone must do so immediately. If anyone doesn't comply the score for that round will be zero.
5. Place your answers in the designated area at the top right side of the exam sheet. If the answer is not there, you will receive no credit.
6. Make sure you know which rounds you are competing in.
7. All participating students in the individual rounds compete in the team round together.
8. Make sure all of your answers are in the necessary simplified form asked for in the problem.
- 9. IF ANY STUDENT WISHES TO CHALLENGE HIS OR HER SCORE, A DESIGNATED PLACE WILL BE SET UP FOR THIS PURPOSE. THIS WILL BE THE ONLY PLACE WHERE CHALLENGES WILL BE HEARD AND ACTED UPON.**
10. We have been requested to make sure all personnel connected with the competition stay in the areas designated for them. If any student fails to comply with this rule, he/she will be asked to leave the building and lose the chance to compete.
11. We feel this will be an interesting and exciting experience for you. We hope to make the challenge an excellent learning experience as well.
12. Looking forward to meeting with you on April 4th, 2024.
13. **NO USE OF CALCULATORS WILL BE ALLOWED IN ANY ROUND..**
14. **ONLY STUDENTS WHO ARE TO COMPETE SHOULD ACCOMPANY THE TEAM TO THIS EVENT.**

## STUDENT INFORMATION REGARDING ANSWER FORMS

All answers must be in simplified, exact form unless the question states otherwise. Consider the following situations:

1.  $\sqrt{12}$  not accepted – should be  $2\sqrt{3}$ .
2. Numerators and denominators of all fractions must be relatively prime.
3. Fractions with radicals in the denominator must be rationalized  
e.g.:  $1/\sqrt{3}$  is not acceptable,  $\frac{\sqrt{3}}{3}$  is acceptable.
4.  $3i$  is not in  $a + bi$  form; must be  $0 + 3i$ ,  $5$  must be  $5 + 0i$ .
5.  $(3 + 5i)/4$  is not in the form  $a + bi$ ; should be  $\frac{3}{4} + \frac{5}{4}i$ .
6.  $1 + \sqrt{-3}$  is not in the form  $a + bi$ ; must be written as  $1 + \sqrt{3}i$ .
7. Function notation and set notation must be used properly.
8. An information sheet about the use of the word “**compute**” will be forthcoming or discussed at the state meet.

### ANSWERS MUST BE LEGIBLE

If the answer is not clearly written, it will probably be marked wrong. Unreasonable calculations need not be carried out, e.g.,  $17^{23}$





MAML State Meet 20 \_\_\_\_\_

Team: \_\_\_\_\_

**MEDIUM**

Student (last, first)	Grade	Round 1	Round 2	Round 3	Round 4	Round 5	Round 6
<b>Totals:</b>							
<b>Print</b> the names of the seniors first, then juniors, etc.							
<b>Print</b> the last name first.						<b>Team</b>	
<b>Cross out</b> the rounds that each student does not take.						<b>Total</b>	

Coach(es): \_\_\_\_\_

MAML State Meet 20\_\_\_\_\_

Team: \_\_\_\_\_

**SMALL**

Student (last, first)	Grade	Round 1	Round 2	Round 3	Round 4	Round 5	Round 6
<b>Totals:</b>							
<b>Print</b> the names of the seniors first, then juniors, etc.							
<b>Print</b> the last name first.						<b>Team</b>	
<b>Cross out</b> the rounds that each student does not take.						<b>Total</b>	

Coach(es): \_\_\_\_\_