



MOAA 2022
The Fifth Annual
Math Open At Andover

A MIDDLE SCHOOL MATH COMPETITION
AT PHILLIPS ACADEMY ANDOVER
<https://andovermathopen.com>

Saturday, OCTOBER 8TH, 2022

Schedule of Events

Time (in ET)	Event	Zoom Location/Actual Location
9:00 - 9:30	Opening Ceremony	Kemper Auditorium
9:30 - 10:30	Talk with Po-Shen Loh (for parents)	Kemper Auditorium
10:00 - 12:00	Speed & Accuracy Round	Morse
12:10 - 12:50	Team Round	Morse
12:50-14:00	Lunch Break	Morse
14:15-15:15	Speaker Session	Kemper Auditorium
15:25-16:25	Talk with Po-Shen Loh	Kemper Auditorium
16:30-17:45	Gunga Bowl	Kemper Auditorium
18:15-18:45	Closing Ceremony	Kemper Auditorium

Please come to the **help desk** with any questions or difficulties:

ZOOM LINK: TBA

Competition Format

The competition will consist of four rounds: two individual rounds and two team rounds. In individual rounds, team members may not collaborate with anyone else, including members of their team. In team rounds, team members may freely collaborate with the members of their team, but not the members of any other team. The problems on each round can be solved using only middle school mathematical techniques and every problem is computationally feasible without calculators. The use of any external source or aid, including calculators, online resources, computer programs, dictionaries, notes, or coaches is prohibited. All answers are non-negative integers and no answer will have a value greater than 1,000,000.

Speed Round

An individual competition, the Speed Round is a 15 question test to be completed in 40 minutes.

Accuracy Round

An individual competition, the Accuracy Round is a 10 question test to be completed in 50 minutes.

Team round

A team competition, the Team Round is a 15 question test to be completed in 40 minutes with your team member

Gunga Bowl

Inspired by the Harvard MIT Mathematics Tournament's Guts Round, the Gunga Bowl is a fast-paced race between teams - with a live scoreboard and timer. The Gunga Bowl is composed of 9 rounds of 3 problems (with point values) each, to be completed in 60 minutes. Each round can only be accessed after completing the previous round, with the goal to get as many points as possible by solving problems correctly.

Competition Rules

No electronic devices or calculation aids (including calculators, phones, online resources, and computer programs) are permitted on any portion of the MOAA.

No mathematical texts or notes of any kind are permitted. Rely on your brain! Compasses, protractors, rulers, straightedges, graph paper, blank scratch paper, and writing implements are generally permitted, so long as they are not designed to give an unfair advantage.

Integrity is of the utmost importance in any competitive event. Any team discovered to be providing or receiving unauthorized aid by any means in any portion of the competition will be immediately disqualified and permanently banned from future editions of MOAA.

Contest Submission Format (For online competitors)

Google Forms links containing password-protected PDFs will be posted on the website and on our Discord server before the competition begins. Competitors will **need their team IDs** to submit.

During the Speed and Accuracy Rounds, the passwords to the PDFs will be displayed on the livestream and emailed to contestants. A timer will be displayed on the screen, and answer submissions should be received before the timer runs out. There will be a short grace period after the timer ends.

During the Team Round and Gunga Bowl, teams should use their own methods to communicate with their team members (e.g. Zoom, Discord). The Team Round will operate in a similar manner to the Speed and Accuracy Rounds, with the distribution of the password during the livestream. Only one member of the team should submit for the Team Round.

The Gunga Bowl problems will be distributed through the Google Forms. Once each round is submitted, a link to the next round will be provided. Only one member of the team should submit for the Gunga Bowl.

Discord Hub

Students are able to interact with other participants online using our Discord server found at <https://discord.gg/f87E8Jt>.

MOAA Contributors

Tournament Directors: Jessica Guo, Andrew Wen, Jaeyong Shim, Patrick Chen

Associate Board: Raina Yang (Director of Registration), Angeline Zhao (Director of Registration), Emily Cain (Director of Outreach), Valencia Zhang (Director of Outreach), Nate Liang (Webmaster), Andy Xu (Problem Organizer)

Faculty Advisor: Mr. Khiem DoBa

Invited Speakers: Po-Shen Loh (USA IMO Coach; Founder of ExpII), Momentum Learning (Osman NaI, Ph.D. of Momentum Learning), Dr. Kevin Wang (Academic Director of Areteem Institute), Mrs. Parfenov (Head of Andover Russian School of Math)

Problem Contributors: Andrew Wen, Andy Xu, Raina Yang, Yifan Kang

Website Programming & Design: Patrick Chen, Nate Liang

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