MTY Academy Syllabus

Course Name: AMC 8 Preparation

Introduction for AMC 8: The AMC 8 is a mathematics contest designed for students in grades 8 and below. Hosted annually by the American Mathematics Competitions (AMC), it is open to students across the United States.

High-scoring AMC 8 participants are often encouraged by their schools to take the more challenging AMC 10 exam. However, there are no formal prerequisites for the AMC 10 other than being in grade 10 or below.
The AMC 8 is organized by the American Mathematics Competitions (AMC), with the Art of Problem Solving (AoPS) as a proud sponsor. This contest aims to inspire interest in mathematics and enhance middle school students' problem-solving skills.

For more details about the AMC 8, visit: **AMC 8 Information.**

Past AMC 8 problems and solutions can be found here: **AMC 8 Problems and Solutions.**

Duration: 33 Lectures (1.5 hours each)

Objective: This course is designed to comprehensively prepare students for the AMC 8 competition scheduled in late January 2026. The curriculum covers a wide range of mathematical concepts and problem-solving techniques essential for success in the competition.

Course Outline:

Session 1 (late May to early July, 10 lectures+1 final exam)

1. Perimeter and Area
2. Patterns
3. Logical Reasoning
4. Operations with Fractions
5. Even and Odd
6. Word problems Related to Percentage
7. Transformations
8. Consecutive Integers
9. Operations with Decimals
10. Sets and Venn Diagrams

Session 2 (late-August to early-November, 10 lectures+1 final exam)

11. Counting Techniques
12. Divisibility
13. Geometric Visualization
14. Factors
15. Prime Numbers
16. Ratio, Rate and Proportion
17. Least Common Multiple and Greatest Common Factor
18. Solving Equations
19. Special Symbols and Operations
20. Remainder

Session 3 (early-November to mid-January 2026, 10 lectures+1 final exam)

21. Sequences and Series
22. Functions
23. Pythagorean Theorem
24. Probability
25. Angles and Triangles
26. Rectangles and Squares
27. Similar Triangles
28. Trapezoids
29. Circles
30. Volumes

Course Schedule:

Session 1: The first 10 topics will be covered on the following dates:
May 29, June 2, June 5, June 9, June 12, June 16, June 19, June 23, June 26, June 30, July 3rd.
Details regarding the schedule and recruitment for **Session 2** and **Session 3** will be announced in July.
Attendance Policy: Students are expected to attend each scheduled class meeting. Regular attendance is essential to your success in this course. If you miss a class, you are responsible for the material covered.

Lecture Notes and Class Recordings: will be posted online after each class. Students are required to read them before doing homework.

Homework: Homework will be posted online after each class and must be submitted it online before the next class. It will be graded, and the results will be posted online. It is the essential for the students to do the homework as exercises in order to digest the material covered in the class.

Quizzes: A 15-minute quiz will be given at the end of each class, except for the first and last sessions. Each quiz is worth 10 points. Since there may not always be enough time to complete the quiz during class, students are encouraged to finish and submit it immediately afterward. Quiz questions will typically resemble those from the previous homework assignment. Each quiz will be graded, and the scores will be posted online afterward.

Final Exam: The final exam will be given at the last class for each session. To be prepared for the final exam, students are required to do all problems on the review sheet posted online.

Awards: The students' grades will be evaluated based on their performance in homework assignments, quizzes, and the final exam. The course grade will be calculated as follows:

Homework assignments: 35%
Quizzes: 35%
Final exam: 30%