AMC 8 Foundations

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Course Description

This is a 4-week preparatory course for the AMC 8 exam. It will meet twice a week for 90 minutes each meeting. Please note that this curriculum is subject to change dependent on the needs and levels of the students enrolled. The goal is to cover the foundational knowledge needed to approach the AMC 8 for the first time. This course will cover gaps in knowledge and understanding while providing students the opportunity to take several practice exams and track their progress.

Required Materials

For this course, we will be using the Art of Problem Solving's Basics: Volume 1 textbook/workbook. You will find the textbook/workbook and its solutions at the link here. Please note that purchasing this textbook is not required, as I will provide the relevant chapters, exercises, and solutions as we go along.

Contact

For other information on the course, you can go to bellatarantino.com/amc8. You can reach the organizer Elva/Weiyan Cai through WeChat @elva2666 (click for QR code) or email elvaweiyan@gmail.com.

Schedule and weekly learning goals

The schedule is tentative and subject to change. The learning goals below should be viewed as the key concepts students should grasp after each week. Each week will be punctuated with two assignments: exercises from the relevant chapters in AoPS: Vol 1 and an AMC 8 exam taken under real test conditions.

Week 1

Part 1: Numbers

- Integers and Rationals

- Lowest Terms and Irrationals

- Divisibility

Part 2: Manipulating Integers

- Number Bases

- Modular Arithmetic

- Number Tricks

Week 2

Part 1: Statistics and Probability

- Frequentist Approach to Probability

- Manipulating Probabilities

- Odds

Part 2: Counting

- Multiplicative Counting

- Factorials

- Permutations and Arrangements

- Combinations

Week 3: Geometry

- Angles

- Quadrilaterals

- Triangles

- Circles

- Polygons

- Areas and Volumes

Week 4: Equations

- Variables

- Linear Equations

- Graphing Linear Equations

- Solving Systems of Linear Equations

- Functions

- Solving Quadratic Equations