

AMC 8 Foundations

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Course Description

This is a 6-week preparatory course for the AMC 8 exam. 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 perform well on the AMC 8. 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.

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: Manipulating Integers

- Integers and Rationals
- Divisibility
- Number Bases
- Modular Arithmetic

Week 2: Probability and Counting

- Frequentist Approach to Probability
- Arrangements and Permutations
- Combinations
- Multiplicative Counting

Week 3: Geometry Pt. 1

- Angles
- Quadrilaterals
- Triangles

Week 4: Geometry Pt. 2

- Circles
- Polygons
- Areas and Volumes

Week 5: Equations Pt. 1

- Variables
- Linear Equations
- Graphing in the Cartesian Plane

Week 6: Equations Pt. 2

- Systems of Linear Equations
- Functions
- Solving Quadratic Equations