

# AMC 10 Assessment Analysis Report

Student Name: xxxxx

AMC10 Assessment test taken at: IQ Learning

Testing Date: May 21, 2026

Overall Performance: Approximately 9/25 correct (~36%).

## 1. A. AMC 10 Topics Tested by Question

Question	Topic
1	Algebraic Series / Telescoping Expressions
2	Number Theory - Modular Arithmetic
3	Consecutive Integers / Algebra
4	Sequences and Patterns
5	Algebraic Manipulation
6	Rates and Weighted Averages
7	Prime Factorization / Divisors
8	Probability
9	Optimization / Quadratic Expressions
10	Quadratic Equations
11	Counting / Inclusion-Exclusion
12	Algebraic Identities
13	3D Geometry - Sphere Volume
14	Combinatorics
15	Quadratic Functions
16	Arithmetic Mean
17	Geometry - Regular Hexagon
18	Permutations
19	Number Theory / Arithmetic Series
20	Geometric Probability
21	Systems of Linear Equations
22	Combinations
23	Polynomial Roots
24	Triangle Geometry / Heron Formula
25	Grid Path Counting

## 2. B. Incorrect Answers vs Correct Answers

Question	Student	Correct	Topic
3	B	A	Consecutive Integers / Algebra
4	B	D	Sequences and Patterns
5	B	C	Algebraic Manipulation
6	B	A	Rates and Weighted Averages
7	B	D	Prime Factorization / Divisors
8	B	A	Probability
11	D	C	Counting / Inclusion-Exclusion
12	B	D	Algebraic Identities
13	C	D	3D Geometry - Sphere Volume
14	B	C	Combinatorics
15	A	B	Quadratic Functions
16	A	C	Arithmetic Mean
18	A	E	Permutations
25	C	D	Grid Path Counting

### 3. C. Strengths and Weaknesses Report

This AMC 10 diagnostic assessment provides a useful snapshot of the student's current mathematical maturity, conceptual understanding, and competition-style problem-solving ability. Based on the submitted work and teacher markings, the student correctly solved approximately 9 out of 25 questions, corresponding to roughly 36% accuracy.

The student's major strengths include foundational algebraic manipulation, willingness to attempt challenging questions, and reasonable comfort with direct computational problems. The student demonstrated persistence throughout the test and attempted a wide variety of problems instead of avoiding difficult sections. This is an important positive indicator because strong AMC students typically improve through repeated exposure to challenging problems.

The student appears reasonably comfortable with basic algebraic reasoning, including substitution, manipulation of equations, and solving standard expressions. In several questions, the work suggests that the student understood the general direction of the solution even when the final answer was incorrect. This indicates that the student possesses useful mathematical intuition that can be developed further through structured competition practice.

The student also showed some success with direct geometry formulas and simpler combinatorial ideas. Questions involving arithmetic calculations, straightforward equations, and certain visual geometric problems appeared more manageable. Additionally, the student consistently showed intermediate work rather than random guessing, which suggests active engagement with the mathematical reasoning process.

However, several important weaknesses currently limit the student's AMC 10 performance. The biggest issue is inconsistency with higher-level competition reasoning. Many incorrect responses came from topics heavily emphasized in AMC competitions, including combinatorics, number theory, probability, and advanced algebraic reasoning.

Combinatorics appears to be one of the weakest areas. Problems involving permutations, subsets, path counting, and increasing-digit arrangements caused significant difficulty. AMC combinatorics problems require systematic counting strategies, organized casework, and strong conceptual understanding of permutations versus combinations. The student should therefore spend substantial time practicing counting methods, inclusion-exclusion, complementary counting, and recursive counting strategies.

Number theory is another major area needing improvement. Questions involving divisibility, modular arithmetic, prime factorization, and divisor counting were challenging for the student. Since AMC contests frequently include difficult number theory questions,

strengthening this topic could significantly improve future scores. The student should focus on modular arithmetic, remainder patterns, greatest common divisors, least common multiples, parity arguments, and prime factorization techniques.

Geometry performance was mixed. While the student showed some geometric intuition, several geometry questions revealed incomplete mastery of formulas and spatial reasoning under timed conditions. Problems involving volume, area relationships, and geometric probability suggest that the student needs more practice translating geometric situations into mathematical equations. Strengthening circles, polygons, coordinate geometry, and area relationships would be highly beneficial.

Another important weakness is strategic efficiency. AMC 10 problems are designed to reward elegant reasoning and pattern recognition rather than lengthy calculations. Several responses suggest that the student occasionally relied on inefficient computation instead of seeking shorter competition-style insights. Learning how to recognize patterns, exploit symmetry, and simplify expressions quickly is essential for higher AMC performance.

Time management likely also affected performance. AMC tests require students to identify which problems are solvable quickly and which should temporarily be skipped. The student appears to have invested considerable effort into difficult problems while potentially missing easier opportunities elsewhere on the exam. Timed practice sessions and full AMC simulations would help improve pacing and decision-making.

To improve effectively, the student should adopt a structured preparation plan emphasizing both conceptual depth and speed. Daily practice in algebra, number theory, geometry, combinatorics, and probability is recommended. Maintaining an error notebook documenting every missed problem and the reason for the mistake would greatly accelerate learning.

The Art of Problem Solving (AoPS) Introduction series in Number Theory, Geometry, and Counting & Probability would likely provide excellent foundational training. Additionally, solving official AMC 10 exams under supervised and timed conditions should become a regular part of preparation.

Overall, this assessment suggests that the student has meaningful mathematical potential and a positive willingness to engage with difficult material. However, significant improvement is needed in advanced competition problem-solving, combinatorics, number theory, and strategic reasoning. With systematic practice, exposure to AMC-style techniques, and consistent timed training, the student could improve substantially over the next several months.