

Algebra II Diagnostic Assessment Report

Incoming PreCalculus Student Performance Analysis

Student name: xxxx

Assessment test taken at: IQ Learning

Questions Answered Incorrectly

Question Number	Student Response	Correct Answer
2	D	B
3	C	B
13	C	B
14	A	B
15	C	A
17	C	A
18	D	A
19	C	A
20	D	A
27	D	A
35	D	C
40	B	A
44	B	A

Unanswered Questions

4, 29, 34, 37, 49

Topic Performance Summary

Topic Area	Correct	Total	Performance
Rational Functions & Asymptotes	8	13	61.5%
Rational Expressions & Inequalities	1	4	25.0%
Exponential & Logarithmic Functions	20	24	83.3%
Quadratics & Completing the Square	0	3	0.0%
Absolute Value & Inequalities	1	4	25.0%

The student demonstrated a reasonably strong overall understanding of Algebra II concepts and appears capable of transitioning into a precalculus-level course with targeted review in selected areas. The assessment results show that the student possesses solid algebraic manipulation skills and especially strong procedural fluency in exponential and logarithmic functions. The student consistently solved growth and decay problems, logarithmic simplification problems, and exponential equations correctly, indicating comfort with symbolic manipulation and interpretation of algebraic models.

One of the strongest areas of performance was Exponential and Logarithmic Functions. The student performed very well on problems involving population growth, half-life models, logarithmic properties, and exponential equations. Questions involving continuous growth, exponential inequalities, and real-world applications were generally solved accurately. This indicates that the student has developed strong procedural confidence with exponential and logarithmic relationships, which are essential for success in precalculus and calculus.

The student also showed competence in Rational Function structure and algebraic simplification. Correct answers on asymptotic behavior, domain restrictions, holes, and simplification problems suggest a good understanding of factoring and rational-expression manipulation. The student appears comfortable recognizing algebraic structure and applying symbolic reasoning to solve function-based problems.

However, the report also reveals several important areas requiring improvement. The student struggled with Rational Inequalities and interval sign analysis. Incorrect answers on problems requiring testing intervals and analyzing where rational expressions are positive or negative suggest that additional work is needed with sign charts and inequality

reasoning. These concepts are extremely important in advanced algebra and precalculus.

The student also had difficulty with Absolute Value Inequalities and interpretation-based modeling statements. Errors on “within” statements and compound inequality translations indicate that the conceptual meaning of absolute value notation should be strengthened. More practice is recommended in converting verbal descriptions into algebraic inequalities and interpreting solution sets graphically.

Quadratic equations and completing the square also require additional reinforcement. The student may have forgotten some of the concepts, or he might have omitted the response to those questions due to lack of time. Regardless, the errors on quadratic-form and vertex-form problems suggest that the student should continue practicing completing the square, quadratic modeling, and transformations of quadratic functions.

Several questions were left unanswered, particularly in higher-level rational function analysis and quadratic applications. This may indicate uncertainty under timed conditions or incomplete conceptual mastery. The student would benefit from focused review in:

- Rational inequalities and sign charts
- Absolute value inequalities
- Completing the square and quadratic transformations
- Rational function graph interpretation
- Advanced algebraic modeling and word problems

Overall, the student demonstrates strong potential for success in physics and pre-calculus. With targeted reinforcement in inequalities, quadratic reasoning, and rational-function analysis including the more advanced related concepts, the student should be able to transition successfully into physics and higher level mathematics coursework.