



**ST. HENRY**  
District High School

## Incoming Freshman Math Placement Exam

*Saturday, April 30, 2022*

8:00-9:00 am

Who:	Current 8th grade students who wish to register for <i>Algebra II Honors</i> as an incoming freshman. <b>*Please note that students who will take <i>Algebra I</i> or <i>Algebra I Honors</i> as a freshman are <u>not</u> required to take this placement test.</b>
What:	An exam that assesses for the mastery of <i>Algebra I</i> concepts and skills required for a successful transition to <i>Algebra II Honors</i> as a freshman. This non-calculator test covers a full year of Algebra I topics.
When:	Saturday, April 30, 2022 from 8:00 - 9:00 am
Where:	SHDHS
How Long:	1 hour; 45 Questions
How Much:	No charge
Registration:	A link to a Google Form will be sent via email or you can email Ms. Grosser at the email address below.
How to Prepare:	Students should be familiar with a full year of Algebra I topics. The list of topics can be found on the reverse of this sheet as well as more details about the SHDHS Math Department and Freshman Math Courses.
Results:	Results will be sent via mail by the end of May to each parent detailing the SHDHS Math Department's recommendation for their student's freshman math course.

For more information or to register for the SHDHS Math Placement Test, please contact Ms. Clare Grosser, Math Department Chair, at [cgrosser@shdhs.org](mailto:cgrosser@shdhs.org).

COME AS **MANY**, LEAVE AS **ONE**

# SHDHS Freshman Math Courses

## Algebra I

### Course Description

The objective of Algebra I is to give students an understanding of algebra by emphasizing concepts, structure, and applications. Topics include the real number system, number theory, algebraic expressions and sentences, linear and quadratic equations, inequalities, operations with polynomials, relations and functions, graphing equalities and inequalities, radical expressions, factoring polynomials, exponents, exponential and rational functions, and solving systems of equations.

### Pre-Requisites

Completed *Pre-Algebra* with an average rate of success, OR  
Completed *Algebra I* with an average rate of success, OR  
Never taken *Algebra I*

## Algebra I Honors

### Course Description

The objective of Algebra I is to give students an understanding of algebra by emphasizing concepts, structure, and applications. Topics include the real number system, number theory, algebraic expressions and sentences, linear and quadratic equations, inequalities, operations with polynomials, relations and functions, graphing equalities and inequalities, radical expressions, factoring polynomials, exponents, exponential and rational functions, and solving systems of equations. It is essential that students have the study habits, maturity, and motivation necessary to be successful in an honors-level course.

### Pre-Requisites

Completed *Pre-Algebra* with a high rate of success, OR  
Completed *Algebra I* with an average rate of success



## Algebra II Honors

### Course Description

This course is designed for students who have demonstrated a high level of proficiency in the concepts and skills of Algebra I. It is essential that students have the study habits, maturity, and motivation necessary to be successful in an honors-level course. In addition to expanding the mathematical concepts of Algebra I, an emphasis is placed on preparation for study of higher mathematics. Students will cover topics including the properties, equations, and graphs of various functions (linear, quadratic, polynomial, exponential, logarithmic, rational, radical), inequalities, absolute value, linear systems of equations, matrices, the complex number system, trigonometry, and an introduction to conic sections.

### Pre-Requisites

Completed Algebra I with a high rate of success, AND  
Demonstrated proficiency on the SHDHS Freshman Math Placement Test.

Students who are prepared for ***Algebra II Honors*** should demonstrate proficiency with ***Algebra I*** skills such as, but not limited to, the following:

- Using order of operations to simplify expressions.
- Solving two-step and multi-step equations in one variable.
- Solving multi-step and compound inequalities and graphing the solutions.
- Evaluating a function for given input values and working with functions in function notation.
- Finding and using x- and y-intercepts to graph lines.
- Writing and graphing linear equations in slope-intercept and/or point-slope form.
- Solving systems of linear equations in two variables by substitution and elimination.
- Using properties of exponents to evaluate and simplify expressions.
- Adding, subtracting, and multiplying polynomials.
- Find products of monomials, binomials, and trinomials.
- Factoring polynomials.
- Solving quadratic equations using the Quadratic Formula.
- Simplifying radical expressions.
- Adding, subtracting, multiplying, and dividing with radical expressions.
- Solving radical equations.
- Simplifying rational expressions.
- Applying all of the above concepts to real-world problems.