

Syllabus

HiSET[®] Preparation Mathematics, Part 1

Course Overview

The HiSET Preparation courses were developed by aligning Plato courseware with the strands and topics assessed on the 2016 HiSET test. Each unit aligns to one or more objectives in the 2016 HiSET test, and the modules within each unit target the essential concepts of the Common Core State Standards as assessed on the HiSET Mathematics subtest. HiSET Preparation—Mathematics focuses on algebraic problem-solving skills. The lessons and activities in this course will help you improve your knowledge and skills in this area.

Course Goals

By the end of this course, you'll be able to do the following:

- Add, subtract, and multiply monomials and binomials, and divide binomials by monomials.
- Solve linear equations, and plot the graph.
- Solve problems involving linear systems of equations.
- Represent functions with equations, graphs and tables.
- Simplify exponential expressions.

General Skills

To participate in this course, you should be able to do the following:

- Complete basic operations with word processing software, such as Microsoft Word or Google Docs.
- Understand the basics of spreadsheet software, such as Microsoft Excel or Google Spreadsheets, but having prior computing experience is not necessary.
- Perform online research using various search engines and library databases.
- Communicate through email and participate in discussion boards.

For a complete list of general skills that are required for participation in online courses, refer to the Prerequisites section of the Plato Student Orientation document, found at the beginning of this course.

Course Materials

- notebook
- computer with Internet connection and speakers or headphones
- Microsoft Word or equivalent
- Microsoft Excel or equivalent

Course Structure

Unit 1: Monomials and Binomials

This unit focuses on basic mathematical operations. In this unit, you'll perform mathematical operations such as addition, subtraction, multiplication, and division of monomials. In addition, you'll learn to add, subtract, and multiply binomials and monomials and how to divide binomials by monomials.

Unit 2: Linear Equations and Graphs

This unit focuses on solving problems graphically. In this unit, you'll check whether an ordered pair and a point are solutions to a given linear equation. You'll also learn to find the slope and intercept of a linear equation and use slope and intercept to write the equation of a given graph. Later, you'll apply the slope-intercept and point-slope forms of the equation of the line. You'll also use linear graphs to solve real-life problems.

Unit 3: Systems of Equations

In this unit, you'll solve systems of linear equations, systems of inequalities (by graphing), practical problems with two variables, and systems of equations (by adding or subtracting). You'll also solve linear equations using the substitution method and solve systems of linear equations using the linear combinations method. Later, you'll use systems of linear equations or inequalities to solve word problems.

Unit 4: Functions

In this unit, you'll use function notation and determine the domain and range of a function. You'll learn how equations, tables, and graphs can represent the same function. You'll also solve problems involving exponential growth and decay. Later in the unit, you'll write normal functions and recursive functions, and also combine functions, to represent situations.

Unit 5: Integer and Rational Exponents

In this unit, you'll simplify and divide exponential expressions. You'll use the power rule for exponents to simplify an expression and apply properties of exponents to rational exponents.