

HS Integrated Mathematics: Course 3 Standards and Benchmarks Confirmed

Standard 1: Use a variety of strategies in the problem-solving process

Benchmarks:

- 1.1 Use a variety of strategies to understand new mathematical content and to develop efficient solution methods or problem extensions
- 1.2 Understand the components of mathematical modeling

Standard 2: Understand and apply basic and advanced properties of the concepts of numbers

Benchmarks:

- 2.1 Understand the properties (e.g., relative magnitude, density, absolute value) of the real number system, its subsystems (e.g., irrational numbers, natural numbers, rational numbers), and complex numbers (e.g., imaginary numbers)
- 2.2 Understand and use properties of exponents

Standard 3: Use basic and advanced procedures while performing the processes of computation

Benchmarks:

- 3.1 Use a variety of operations on expressions containing real numbers
- 3.2 Use recurrence relations to model and solve real world problems

Standard 5: Understand and apply basic and advanced properties of the concepts of geometry

Benchmarks:

- 5.1 Understand and apply the properties of circles
- 5.2 Understand the basic properties of polar coordinates

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- 5.3 Understand and use advanced properties of triangles
- 5.4 Understand the basic concepts of non-right triangle trigonometry
- 5.5 Understand the basic properties of trigonometric identities
- 5.6 Understand the characteristics and use of vectors

Standard 6: Understand and apply basic and advanced concepts of statistics and data analysis

Benchmarks:

- 6.1 Organize and display data using tables, graphs, frequency distributions and plots
- 6.2 Understand basic characteristics of measures of central tendency (i.e., mean, mode, median)
- 6.3 Understand basic characteristics of measures of dispersion.
- 6.4 Understand different methods of curve fitting

Standard 7: Understand and apply basic and advanced concepts of probability

Benchmarks:

- 7.1 Determine probabilities and expected values using theoretical and mathematical models
- 7.2 Understand the concepts of independent and dependent events and how they are related to compound events and conditional probability

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Standard 8: Understand and apply basic and advanced properties of functions and algebra

Benchmarks:

- 8.1 Understand and apply basic and advanced properties of functions
- 8.2 Understand and apply basic and advanced properties of exponential and logarithmic functions
- 8.3 Understand the characteristics and use of basic trigonometric functions
- 8.4 Understand polynomial equations
- 8.5 Understand the concept of systems of equations and inequalities
- 8.6 Understand the concepts of sequences and series