



# High School Mathematics Essential Standards

## Advanced Standards Quick Guide

This document outlines the essential standards for advanced mathematics courses in Idaho high schools. These courses would be the courses taken after foundational coursework in Algebra and Geometry are completed.

In Idaho, third year high school math courses are often one of the following: Integrated Math 3, Algebra 2, Applied Math, Business Math, Data Science and mathematics courses integrated into Career Technical Education. These courses can lead to fourth year courses that include Pre-Calculus, Calculus, Statistics, and Applied Math courses at the college level.

Essential standards are explicitly taught, assessed more than once, and intervened upon if students have not yet reached proficiency. These are standards students will use in all future mathematics courses and most work experiences.

All of the Idaho Content Standards for Mathematics are important, but they are not equally important. The Essential Standards Extended Guide shows how standards can be grouped for instruction and provides guidance for the different math pathways offered at the college level. Examples related to individual standards and teaching notes can be found in the Idaho Content Standards for Mathematics and the 9-12 Course Planning Guide for High School Mathematics.

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N.Q.A.2. Define appropriate quantities for the purpose of descriptive modeling.

A.SSE.B.3 Choose and produce an equivalent form of an expression to reveal and explain properties of the quantity represented by the expression.

A.CED.A.1 Create one-variable equations and inequalities to solve problems, including linear, quadratic, rational, and exponential functions.

A.CED.A.2 Interpret the relationship between two or more quantities.

A.CED.A.2a Define variables to represent the quantities and write equations to show the relationship.

A.CED.A.2b Use graphs to show a visual representation of the relationship while adhering to appropriate labels and scales.

A.REI.B.4. Solve quadratic equations in one variable.

A.REI.D.10. Demonstrate understanding that the graph of an equation in two variables is the set of all its solutions plotted in the coordinate plane. Show that any point on the graph of an equation in two variables is a solution to the equation.

A.REI.D.12. Graph the solutions to a linear inequality in two variables as a half-plane (excluding the boundary in the case of a strict inequality), and graph the solution set to a system of linear inequalities in two variables as the intersection of the corresponding half-planes.

F.IF.B.4 For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship. Key features include: intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative maxima and minima; symmetries; end behavior; and periodicity.

S.ID.B.6. Represent data on two categorical variables on a clustered bar chart and describe how the variables are related. Summarize categorical data for two categories in two-way frequency tables. Interpret relative frequencies in the context of the data (including joint, marginal, and conditional relative frequencies). Recognize possible associations and trends in the data. ★