

PASS Summary Chart of Standards and Criteria for Mathematics

Standard What students must be able to do:	Criteria What students should demonstrate:
<p>A: Solve Mathematical Problems* Apply mathematical problem-solving strategies to problems from within and outside mathematics; devise, implement, and evaluate processes and solutions; select and use appropriate models, operations, and technologies.</p>	<p>A1: Formulation and Understanding: Understand and formulate problems; select or provide relevant information; use mathematical concepts, models, and representations.</p> <p>A2: Processes and Strategies: Consider and choose among various strategies, algorithms, models, and concepts to devise and carry out solutions.</p> <p>A3: Verification: Evaluate processes, strategies, calculations, and solutions to verify reasonableness; explore alternative approaches, extensions, and generalizations.</p> <p>A4: Communication: Represent and communicate reasoning processes, solutions, ideas, and conclusions; use correct mathematical terminology, symbols, and notation.</p>
<p>B: Perform Algebraic Operations* Use numeric and algebraic operations and mathematical expressions to solve equations and inequalities.</p>	<p>B1: Solving Equations and Inequalities: Solve equations and inequalities numerically, graphically, and/or algebraically.</p> <p>B2: Estimate and Compute: Use computation, estimation, and mathematical properties to solve problems; use estimation to check the reasonableness of results, including those obtained by technology.</p> <p>B3: Use of Matrices: Use matrices to organize and analyze information and to solve systems of equations.</p>
<p>C: Use Geometric Concepts and Models Represent and solve problems with two- and three-dimensional geometric models, properties of figures, analytic geometry, and right-triangle trigonometry.</p>	<p>C1: Recognition and Analysis of Geometric Figures: Represent, interpret, and analyze a wide variety of geometric figures and their properties using drawings, models, and the Cartesian coordinate system.</p> <p>C2: Direct and Indirect Measurement: Use geometry and right-triangle trigonometry to determine measurements.</p> <p>C3: Use of Geometric Models: Use geometric relationships, spatial reasoning, and models to solve problems.</p>

* may be met by CIM requirements

Standard

What students must be able to do:

D: Use Probability and Statistics to Collect and Study Data

Use probability and statistics in the study of various disciplines, situations, and problems; understand and apply valid statistical methods and measures of central tendency, variability, and correlation in the collection, organization, analysis, and interpretation of data.

Criteria

What students should demonstrate:

D1: Use of Probability Models: Use experimental or theoretical probability to represent and interpret situations or problems involving uncertainty.

D2: Organization and Use of Data: Create, interpret, and analyze charts, tables, and graphs to display data, draw inferences, make predictions, and solve problems.

D3: Analysis and Interpretation of Data: Analyze data using descriptive and inferential statistics; interpret statistical results.

D4: Statistical Investigation: Design and conduct statistical experiments, simulations, or surveys; collect data.

E: Use Functions to Understand Mathematical Relationships

Use patterns and functions to represent relationships between variables and to solve problems; interpret and understand the connections among symbolic, graphic, and tabular representations of linear, quadratic, and exponential functions.

E1: Representation and Recognition of Functions: Represent functions using and translating among words, tables, graphs, and symbols; recognize and distinguish a variety of classes of functions.

E2: Analysis of Functions: Understand and analyze features of a function and limitations on the domain of a function.

E3: Use of Functions as Models: Model situations and solve problems using a variety of functions.

F: Represent, Analyze, and Use Advanced Functions

Analyze the nature and behavior of more-advanced functions, including trigonometric, logarithmic, general polynomial, and rational, and use such functions to model mathematical relationships.

F1: Manipulation and Solution of Advanced Functions: Simplify expressions and solve equations involving advanced functions.

F2: Representation and Recognition of Advanced Functions: Represent advanced functions using and translating among words, tables, graphs, and symbols; recognize and distinguish classes of advanced functions.

F3: Analysis of Advanced Functions: Understand and analyze the behavior of advanced functions.

F4: Use of Advanced Functions as Models: Model situations and solve problems using a variety of advanced functions.