

Florida Department of Education

Grade 10 Math Sunshine State Standards
Assessed by FCAT

SUNSHINE STATE STANDARD BENCHMARKS – GRADE 10 MATH
MA.A.1.4.2 Understands the relative size of integers, rational numbers, irrational numbers, and real numbers.
MA.A.1.4.4 Understands that numbers can be represented in a variety of equivalent forms, including integers, fractions, decimals, percents, scientific notation, exponents, radicals, absolute value, and logarithms. (Includes MA.A.1.4.1 Associates verbal names, written word names, and standard numerals with integers, rational numbers, irrational numbers, real numbers, and complex numbers; and MA.A.1.4.3 Understands concrete and symbolic representations of real and complex numbers in real-world situations.)
MA.A.3.4.1 Understands and explains the effects of addition, subtraction, multiplication, and division on real numbers, including square roots, exponents, and appropriate inverse relationships. (Includes MA.A.2.4.2 understands and uses the real number system.)
MA.A.3.4.2 Selects and justifies alternative strategies, such as using properties of numbers, including inverse, identity, distributive, associative, and transitive, that allow operational shortcuts for computational procedures in real-world or mathematical problems. (Includes MA.A.2.4.2 understands and uses the real number system.)
MA.A.3.4.3 Adds, subtracts, multiplies, and divides real numbers, including square roots and exponents, using appropriate methods of computing, such as mental mathematics, paper and pencil, and calculator. (Includes MA.A.2.4.2 understands and uses the real number system.)
MA.A.4.4.1 Uses estimation strategies in complex situations to predict results and to check the reasonableness of results. (Includes MA.B.3.4.1 Solves real-world and mathematical problems involving estimates of measurements, including length, time, weight/mass, temperature, money, perimeter, area, and volume, and estimates the effects of measurement errors on calculations.)
MA.B.1.4.1 Uses concrete and graphic models to derive formulas for finding perimeter, area, surface area, circumference, and volume of two- and three-dimensional shapes, including rectangular solids, cylinders, cones, and pyramids.
MA.B.1.4.2 Uses concrete graphic models to derive formulas for finding rate, distance, time, angle measures, and arc lengths.
MA.B.2.4.1 Selects and uses direct (measured) or indirect (not measured) methods of measurement as appropriate.
MA.B.2.4.2 Solves real-world problems involving rated measures (miles per hour, feet per second).

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MA.C.1.4.1 Uses properties and relationships of geometric shapes to construct formal and informal proofs.
MA.C.2.4.1 Understands geometric concepts such as perpendicularity, parallelism, tangency, congruency, similarity, reflections, symmetry, and transformations including flips, slides, turns, enlargements, rotations, and fractals. (Includes MA.B.1.4.3 Relates the concepts of measurement to similarity and proportionality in real-world situations; and MA.C.3.4.1 Represents and applies geometric properties and relationships to solve real-world and mathematical problems including ratio, proportion, and properties of right triangle trigonometry.)
MA.C.2.4.2 Analyzes and applies geometric relationships involving planar cross-sections (the intersection of a plane and a three-dimensional figure).
MA.C.3.4.2 Using a rectangular coordinate system (graph), applies and algebraically verifies properties of two- and three-dimensional figures, including distance, midpoint, slope, parallelism, and perpendicularity. (Includes MA.D.2.4.1 Represents real-world problem situations using finite graphs, matrices, sequences, series, and recursive relations.)
MA.D.1.4.1 Describes, analyzes, and generalizes relationships, patterns, and functions using words, symbols, variables, tables, and graphs.
MA.D.1.4.2 Determines the impact when changing parameters of given functions.
MA.D.2.4.2 Uses systems of equations and inequalities to solve real-world problems graphically, algebraically, and with matrices. (Includes MA.D.2.4.1 Represents real-world problem situations using finite graphs, matrices, sequences, series, and recursive relations.)
MA.E.1.4.1 Interprets data that have been collected, organized, and displayed in charts, tables, and plots. (Includes MA.E.1.4.3 Analyzes real-world data and makes predictions of larger populations by applying formulas to calculate measures of central tendency and dispersion using the sample population data, and using appropriate technology, including calculators and computers.)
MA.E.1.4.2 Calculates measures of central tendency (mean, median, and mode) and dispersion (range, standard deviation, and variance) for complex sets of data and determines the most meaningful measure to describe the data. (Includes MA.E.1.4.3 Analyzes real-world data and makes predictions of larger populations by applying formulas to calculate measures of central tendency and dispersion using the sample population data, and using appropriate technology, including calculators and computers.)

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MA.E.2.4.1 Determines probabilities using counting procedures, tables, tree diagrams, and formulas for permutations and combinations. (Includes MA.E.2.4.2 Determines the probability for simple and compound events as well as independent and dependent events.)

MA.E.3.4.1 Designs and performs real-world statistical experiments that involve more than one variable, then analyzes results and reports findings. (Includes MA.E.3.4.2 Explains the limitations of using statistical techniques and data in making inferences and valid arguments.)

