

MyReadinessTest

Math Prep for Physics – Topics & Subtopics

Module 1: Mathematics (514 unique exercises)

- Multiplication and Division of Integers
- Simplifying a Fraction
- Equivalent Fractions
- Multiplying Fractions
- Reading and Writing Decimals
- Rounding decimals
- Adding and Subtracting Decimals
- Percent
- Exponents, Order of Operations, and Inequality

Module 2: Algebraic Expressions (271 unique exercises)

- The Product Rule and Power Rules for Exponents
- Integer Exponents and the Quotient Rule
- Evaluation of a polynomial in one variable
- Properties of Real Numbers
- Combining like terms
- Algebraic symbol manipulation
- Power rule: Positive exponents
- Power rule: Negative exponents
- Multiplying monomials
- Multiplying binomials

Module 3: Algebraic Equations (155 unique exercises)

- Solving a linear equation
- Solving a rational equation that simplifies to a linear equation

Module 4: Graphing (8 unique exercises)

- Graphing a line through a given point with a given slope
- Slope of a Line

Module 5: Geometry (39 unique exercises)

- Volume of a cube or a rectangular prism
- Circumference and area of a circle
- Volume of a sphere
- Volume of a cylinder

Module 6: Scientific Notation (255 unique exercises)

- Multiplication of a decimal by a power of ten
- Division of a decimal by a power of ten
- Converting between decimal numbers and numbers written in scientific notation
- Multiplying and dividing numbers written in scientific notation
- Calculating positive powers of scientific notation
- Finding negative powers of scientific notation

Module 7: SI Units (10 unique exercises)

- Interconverting temperatures in Celsius and Fahrenheit

Module 8: Measurement Math (45 unique exercises)

- Adding and subtracting simple units
- Multiplying and dividing simple units
- Powers and roots of powers of simple units
- Forming compound units
- Adding and subtracting compound units
- Multiplying and dividing compound units
- Powers and roots of compound units

Module 9: Measurement Uncertainty (10 unique exercises)

- Counting significant digits
- Rounding to a given significant digit
- Counting significant digits when measurements are added or subtracted
- Counting significant digits when measurements are multiplied or divided
- Adding, subtracting, multiplying and/or dividing measurements

Module 10: Direct and Inverse Proportions (49 unique exercises)

- Proportions
- Solving Proportions
- Solving Application Problems with Proportions

Module 11: Plane Geometry (240 unique exercises)

- Lines and Angles
- Rectangles and Squares
- Parallelograms and Trapezoids
- Triangles
- Circles
- Volume and Surface Area
- Pythagorean Theorem
- Congruent and Similar Triangles
- Problem Solving with U.S. Customary Measurements
- The Metric System--Length
- The Metric System--Capacity and Weight (Mass)
- Problem Solving with Metric Measurement
- Metric--U.S. Customary Conversions and Temperature

Module 12: Radians and Arc Length (17 unique exercises)

- Angles and Radian Measure

Module 13: Pythagorean Theorem (13 unique exercises)

- Pythagorean Theorem

Module 14: Solving Equations with Two or More Unknowns (68 unique exercises)

- Solving Systems of Linear Equations by Substitution
- Solving Systems of Linear Equations by Elimination
- Applications of Linear Systems
- Solving Systems of Linear Equations in Three Variables

Module 15: Solving an Equation using the Quadratic Formula (25 unique exercises)

- Solving Quadratic Equations by the Quadratic Formula
- Quadratic Equations

Module 16: Binomial Expansion (25 unique exercises)

- The Binomial Theorem
- More on The Binomial Theorem

Module 17: Trigonometric Functions (159 unique exercises)

- Right Triangle Trigonometry
- Trigonometric Functions of Any Angle
- Trigonometric Functions of Real Numbers; Periodic Functions
- Graphs of Sine and Cosine Functions
- Graphs of Other Trigonometric Functions
- Inverse Trigonometric Functions

Module 18: Trigonometric Identities (51 unique exercises)

- Sum and Difference Formulas
- Double-Angle and Half-Angle Formulas
- Product-to-Sum and Sum-to-Product Formulas

Module 19: Trigonometry: Law of Sines and Law of Cosines (30 unique exercises)

- The Law of Sines
- The Law of Cosines

Module 20: Common Logarithms (17 unique exercises)

- Identify and Evaluate Common
- Use Common Logarithms

Module 21: Natural Logarithms (16 unique exercises)

- Identify and Evaluate Natural Logarithms
- Use Natural Logarithms

Module 22: Vectors (32 unique exercises) - *for courses with a Calculus prerequisite*

- Vectors: Terminology and Basic Properties
- Vector Multiplication

Module 23: Derivatives (89 unique exercises) - *for courses with a Calculus prerequisite*

- Techniques for Finding Derivatives
- Derivatives of Products and Quotients
- The Chain Rule

Module 24: Indefinite Integrals (32 unique exercises) - *for courses with a Calculus prerequisite*

- Antiderivatives
- Substitution

Module 25: Definite Integrals (29 unique exercises) - *for courses with a Calculus prerequisite*

- Area and the Definite Integral
- The Fundamental Theorem of Calculus