

# AICE Calculus & Mech2

## *Functions and Sequences Reporting Standard*

PS 1 - Explore Mathematical concepts applied to rational numbers, ratios, and their representations

PS 2 - Determine the foundations of Sequences

PS 3 - Apply the principals of Sequences to solve equations

PS 4 - Apply sequences to financial models

PS 5 - Apply combinatorics to the binomial theorem.

PS 6 - Solve contextual problems with combinatorics

PS 7 - Construct probability distributions and compute expectation for discrete random variables.

PS 8 - Solve equations using functions and their inverses

## *Trigonometry and Graphing Reporting Standard*

PS 9 - Apply Algebraic and Geometric properties in context

PS 10 - Shift the 6 standard trigonometric functions

PS 11 - Apply specified domains to the sketch of trigonometric functions

PS 12 - Understand the restrictions for and evaluate the inverse of trigonometric functions

PS 13 - Solve contextual problems by shifting trigonometric functions

PS 14 - Solve contextual problems by applying the composition of trigonometric functions

PS 15 - Apply trigonometric properties to right triangles and arc lengths

## *Trigonometry and the Unit Circle Reporting Standard*

PS 16 - Apply angle properties in context of Algebra

PS 17 - Memorize and create the unit circle

PS 18 - Apply the unit circle to solve trigonometric problems

PS 19 - Understand and apply the properties of angles written in multiple forms

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PS 20 - Solve contextual Trigonometric problems by applying angle properties Trigonometry

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PS 21 - Apply the three trigonometric functions to the coordinate plane

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PS 22 - Solve contextual problems with right triangles

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PS 23 - Use the Laws of Sines and Cosines

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### *Trigonometry and Solving Equations Reporting Standard*

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PS 24 - Apply and solve various equations

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PS 25 - Use technology to find all solutions to a trigonometric function

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PS 26 - Find solutions in the domain  $[0, 2\pi)$

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PS 27 - Find solutions in the domain  $[0, 2\pi)$  using the double angle formula

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PS 28 - Apply simple identities to solve trigonometric equations

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PS 29 - Solve problems using more complex identities

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PS 30 - Find the area of oblique triangles and sectors

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### *Statistics and Probability Reporting Standard*

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PS 31 - Apply knowledge of the co-ordinate plane

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PS 32 - Use deductive proofs with appropriate symbols and notation

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PS 33 - Explore concepts of sampling and data

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PS 34 - Calculate probabilities for binomial distributions

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PS 35 - Find normal probabilities and the reverse process

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PS 36 - Explore measures of central tendencies and spread including mean, median, mode, variance, and standard deviation.

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PS 37 - Determine standard deviation and/or mean of a non-standard normal distribution using the z-score formula.

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PS 38 - Solve contextual problems with compound probabilities

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PS 39 - Determine key features of graphs

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### *Modeling and Data Representations Reporting Standard*

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PS 40 - Apply Venn diagrams to answer probability questions

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PS 41 - Analyze bivariate data to calculate the correlation co-efficient, the least squares regression line and determine prediction values

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PS 42 - Create a sample space by means of a tree diagram and apply it to answer probability questions

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PS 43 - Solve probability questions using other methods

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PS 44 - Demonstrate Mathematical Processes in Explorations and Modeling

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PS 45 - Determine Results through Explorations and Modeling

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PS 46 - Use appropriate and effective Communication in Explorations and Modeling

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PS 47 - Use diagrammatic representation

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