

# IB Pre-Calculus SL

- PS 1 Explore Mathematical concepts applied to rational numbers, ratios, and their representations.
- PS 2 Apply Algebraic and Geometric properties in context.
- PS 3 Apply angle properties in context of Trigonometry.
- PS 4 Apply angle properties in context of Algebra.
- PS 5 Solve quadratic and rational equations.
- PS 6 Solve radical equations.
- PS 7 Solve and graph compound inequalities.
- PS 8 Apply knowledge of the co-ordinate plane.
- PS 9 Apply knowledge of slope.
- PS 10 Use and apply function notation, including split functions.
- PS 11 Find, describe and sketch shifts to standard functions.
- PS 12 Perform function operations, including composition.
- PS 13 Determine the existence of an inverse, and find the inverse of a function.
- PS 14 Find, understand and apply the fundamentals of functions – Domain, range, determining if it is a function or not, increasing and decreasing.
- PS 15 Memorize and create the unit circle.
- PS 16 Apply the unit circle to solve trigonometric problems.
- PS 17 Apply trigonometric functions by solving right triangles.
- PS 18 Understand and apply the properties of angles written in multiple forms.
- PS 19 Memorize and sketch the 6 standard trigonometric functions.
- PS 20 Shift the 6 standard trigonometric functions.
- PS 21 Understand the restrictions for and evaluate the inverse of trigonometric functions.
- PS 22 Solve questions involving compound trigonometric functions and their inverses, using right triangles.
- PS 23 Solve right triangles.
- PS 24 Find all solutions to a trigonometric function.
- PS 25 Find solutions in the domain  $[0, 2\pi)$ .
- PS 26 Find solutions in the domain  $[0, 2\pi)$  when the variable has a co-efficient.
- PS 27 Memorize and apply simple identities to solve problems.
- PS 28 Recognize and apply more complex identities to solve problems.
- PS 29 Memorize and use the Laws of Sines and Cosines.
- PS 30 Recognize and find zero case and 2 case triangles.
- PS 31 Apply the Laws of Sines and Cosines to solve contextual problems.
- PS 32 Find the area of oblique triangles.
- PS 33 Make connections between the standard and completed square forms of a quadratic function.
- PS 34 Identify important features of a parabola and graph.
- PS 35 Identify asymptotes of a rational function and apply them to graph.

- PS 36 Graph exponential functions.
- PS 37 Determine end behavior.
- PS 38 Apply the definition of logarithms.
- PS 39 Apply the properties of logarithms.
- PS 40 Translate between different forms of logarithmic and exponential statements.
- PS 41 Solve logarithmic and exponential equations.
- PS 42 Solve contextual problems by means of logarithmic or exponential equations.
- PS 43 Determine the foundations of Sequences.
- PS 44 Apply the principals of Sequences.
- PS 45 Find combinatrices.
- PS 46 Apply combinatrices to probability.
- PS 47 Apply combinatrices to binomial expansion.
- PS 48 Construct probability distributions and compute expectation for discrete random variables.
- PS 49 Calculate probabilities for binomial distributions.
- PS 50 Find normal probabilities and the reverse process.
- PS 51 Explore measures of central tendencies and spread including mean, median, mode, variance, and standard deviation.
- PS 52 Determine standard deviation and/or mean of a non-standard normal distribution using the z-score formula.
- PS 53 Draw Venn diagrams.
- PS 54 Apply Venn diagrams to answer probability questions.
- PS 55 Analyze bivariate data to calculate the correlation co-efficient, the least squares regression line and determine prediction values.
- PS 56 Create a sample space by means of a tree diagram and apply it to answer probability questions.
- PS 57 Use other means to answer probability questions.
- PS 58 Determine the equations of period functions given the maximum and minimum values.
- PS 59 Determine the equations of periodic functions given the center and radius of a circle.
- PS 60 Determine the foundations of vectors.
- PS 61 Perform operations with vectors.
- PS 62 Apply vectors to the concept of linear equations.
- PS 63 Demonstrate Mathematical Processes in Explorations and Modeling.
- PS 64 Determine Results through Explorations and Modeling.
- PS 65 Use appropriate and effective Communication in Explorations and Modeling.