



# Cambridge AICE Calculus Mechanics 1

## 11<sup>th</sup> Grade

- PS 1 Manipulate, analyze and compare quadratic functions and their graphs.
- PS 2 Understand and apply function concepts including inverses, composition, domain, and range.
- PS 3 Understand and use the graphs, equations and intersections of lines to solve problems.
- PS 4 Calculate and apply arc length and sector area using degrees and radians.
- PS 5 Manipulate, analyze, and apply trigonometric functions and their graphs.
- PS 6 Understand, use, and apply notation for and operations involving vectors and scalars.
- PS 7 Understand, manipulate, and apply arithmetic, geometric, and convergent geometric series.
- PS 8 Calculate and use derivatives to find slopes, stationary points, and analyze functions.
- PS 9 Calculate and use integrals to analyze functions and find areas and volumes of bounded regions.
- PS 10 Understand and apply vector force, equilibrium, friction, and Newton's 3rd law to solve problems.
- PS 11 Use formulae, differentiation, and integration to analyze linear displacement, velocity, and acceleration.
- PS 12 Use and apply Newton's laws to calculate particle motion.
- PS 13 Understand energy, work, and power and apply appropriate formulae to solve problems.