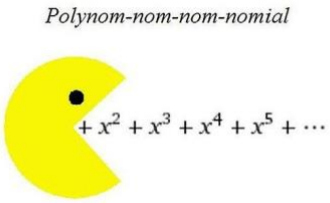
SWINBURNE
SENIOR SECONDARY COLLEGE

Maths Methods
HOLIDAY HOMEWORK
Year 12, 2021



Teacher(s)/Subject Coordinator:	Osman Sevgi osman.sevgi@sssc.vic.edu.au
Work required in preparation for start of 2021:	Please complete the following questions from Chapter 1 of the Cambridge Mathematical Methods Text book 1A Q1, 4, 5, 7, 8 1B Q1, 2 LHS, 4, 5, 9 LHS, 11, 15 1C Q1, 2, 5, 6, 8, 10, 12, 14
Textbooks and other resources:	Cambridge Mathematical Methods Units 3 & 4 CAS Calculator (Ti-Nspire or Casio)
Key Links:	https://www.vcaa.vic.edu.au/Pages/vce/studies/mathematics/cas/casexams.aspx https://www.vcaa.vic.edu.au/Documents/vce/mathematics/MathematicsSD-2016.pdf
Due date:	Friday 7th of February 2019

COURSE OUTLINE

Area of Study 1: Functions and Graphs

In this area of study students cover transformations of the plane and the behaviour of some elementary functions of a single real variable, including key features of their graphs such as axis intercepts, stationary points, points of inflection, domain (including maximal, implied or natural domain), co-domain and range, asymptotic behaviour and symmetry. The behaviour of these functions and their graphs is to be linked to applications in practical situations.

Area of Study 2: Algebra

In this area of study students cover the algebra of functions, including composition of functions, simple functional relations, inverse functions and the solution of equations. They also study the identification of appropriate solution processes for solving equations, and systems of simultaneous equations, presented in various forms. Students also cover recognition of equations and systems of equations that are solvable using inverse operations or factorisation, and the use of graphical and numerical approaches for problems involving equations where exact value solutions are not required or which are not solvable by other methods. This content is to be incorporated as applicable to the other areas of study.

Area of Study 3: Calculus

In this area of study students cover graphical treatment of limits, continuity and differentiability of functions of a single real variable, and differentiation, anti-differentiation and integration of these functions. This material is to be linked to applications in practical situations.

Area of Study 1: Probability

In this area of study students cover discrete and continuous random variables, their representation using tables, probability functions (specified by rule and defining parameters as appropriate); the calculation and interpretation of central measures and measures of spread; and statistical inference for sample proportions. The focus is on understanding the notion of a random variable, related parameters, properties and application and interpretation in context for a given probability distribution.

Assessment

SAC 1: Application Task (Approximately Week 13 of Semester 1)

A function and calculus-based mathematical investigation of a practical or theoretical context involving content from two or more areas of study, with the following three components of increasing complexity:

- introduction of the context through specific cases or examples
- consideration of general features of the context
- variation or further specification of assumption or conditions involved in the context to focus on a particular feature or aspect related to the context.

SAC 2: Problem Solving Task (Approximately Week 7 of Semester 2)

A trigonometry and integration-based task where students demonstrate understanding through analysis of a series of questions.

SAC 3: Modelling Task (Approximately Week 12 of Semester 2)

A probability-based task specifics TBC.