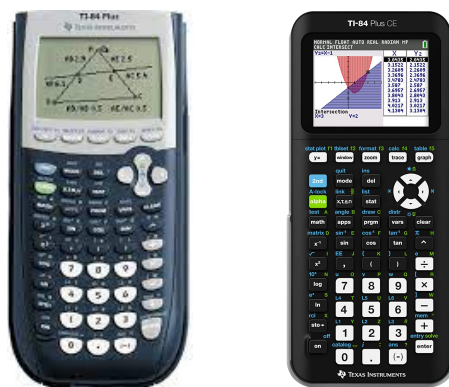# Mathematics on a Graphics Calculator

A set of comprehensive materials in book form written by Peter McIntyre for the **TI-84** (84, 84CE) and **Casio 9860** (CG20/50) families of graphics calculators, which cover most models currently in use in schools other than the TI-nSpire/Casio ClassPad. The aim is to make life easier for teachers and students to use the calculator for Maths and appreciate its full power.

The materials range from mostly how to do various Maths operations on your calculator in a mathematical context to more-extensive notes. All are illustrated with examples and calculator screen shots. All topics have exercises and/or activities with full solutions.

Available from the CMA website *canberramaths.org.au*: click on ≡ or MORE, then on RESOURCES GRAPHICS CALCULATORS.

Mathematics on a TI-84/CE

Written for both the older TI-84Plus and the newer TI-84CE.

The book comes in four volumes and a Volume 1 Supplement, together with programs.

Volume 1: Basics contains the topics: *Graphics Calculators and Mathematics*; *Getting Started; Coordinate Geometry*; *Inequalities and Linear Programming*; *Fitting Curves to Data 1 – Calculator Functions*; *Population Modelling 1 – Exponential Growth*; *Financial Mathematics 1 – Compound Interest*; and *Probability and Statistics 1 – Descriptive Statistics*.

Volume 1 Supplement: Activities for Years 9 and 10 contains extra activities for *Coordinate Geometry* and *Probability and Statistics 1*.

Volume 2: Calculus contains topics directly relevant to Calculus and its applications, although *Functions and their Graphs* is of more general relevance and also contains details of how to capture screenshots from your calculator, crop them if desired and insert them into documents. The topics are: *Functions and their Graphs*; *Graph and Calculus Operations*; *Numerical Integration*; *Taylor Series*; *Differential Equations*; *Population Modelling 2 – Logistic and Epidemic Models*; *Multivariable Calculus*; and *Program Information*.

Program Information lists all the programs in the book, and gives information on copying and using the programs. Programs are provided in a zip file on the website.

Volume 3: Advanced contains more-advanced topics, relevant to students and teachers of Specialist Mathematics and Mathematics courses in first-year university: *Sequences and Series*; *Probability and Statistics 2 – Probability Distributions and Hypothesis Testing*; *Matrices and Vectors*; *Population Modelling 3 – Matrix Models*; *Fitting Curves to Data 2*; *Financial Mathematics 2 – TVM Calculations*; *Complex Numbers*; and *Programming*.

Volume 4: Mathematics Labs contains 28 Mathematics labs or projects suitable for Year 12 and beyond, together with a Lab Manual for teachers/instructors.

Mathematics on a Casio 9860/CG20/CG50

The Casio graphics-calculator models CG20AU and CG50AU are basically the same as the 9860 used in the book (except for higher-resolution screens). This is probably true of all Casio graphics calculators one level below the ClassPad. There may be minor differences in how the screen looks and the menus but they all do the same calculations.

The book comes in three volumes and a Volume 1 Supplement, together with programs.

Volume 1: Basics contains the basic topics: *Graphics Calculators and Mathematics*; *Getting Started*; *Coordinate Geometry*; *Inequalities and Linear Programming*; *Fitting Curves to Data – Calculator Functions*; *Population Modelling 1 – Exponential Growth*; *Financial Mathematics 1 – Compound Interest*; and *Probability and Statistics 1 – Descriptive Statistics*.

Volume 1 Supplement: Activities for Years 9 and 10 contains extra activities for *Coordinate Geometry* and *Probability and Statistics 1*.

Volume 2: Calculus contains topics directly relevant to Calculus and its applications, although *Functions and their Graphs* is of more general relevance and also contains details of how to capture screenshots from your calculator, crop them if desired and insert them into documents. The topics are: *Functions and their Graphs*; *Graph and Calculus Operations*; *Numerical Integration*; *Taylor Series*; *Differential Equations*; *Population Modelling 2 – Logistic and Epidemic Models*; and *Program Information*.

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Contact

Happy to receive comments, corrections, suggestions, requests for help, etc.

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