



the
Canberra College
caring for your future

LEARNER GUIDE

Support for learning Mathematics and the expectations of students

To assist their learning

Mathematics

This is an initiative of the Canberra College Literacy Plan

This booklet is designed to give you information that will help you in your studies. It contains a number of different types of information including contact details, bibliography writing, glossary of terms, marking rubrics and schemes, information about producing different types of assessment items, resources you can use, academic requirements.

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BSSS POLICIES REGARDING ASSESSMENT

The following is edited from the Board of Senior Secondary Studies Policy and Procedures Manual:

4.3.8 ATTENDANCE/PARTICIPATION

It is expected that students will attend and participate in all scheduled classes/contact time/structured learning activities for the units in which they are enrolled, unless there is due cause and adequate documentary evidence is provided. Any student whose attendance falls below 90% of the scheduled classes/contact time or 90% participation in structured learning activities in a unit, without having due cause with adequate documentary evidence will be deemed to have voided the unit.

4.3.9 COMPLETION OF ASSESSMENT ITEMS

Students are required to substantially complete and submit all assessment items that contribute to the assessment for a unit unless due cause and adequate documentary evidence is provided.

Exemption from an item and/or alternative assessment without penalty is available to students providing adequate documentary evidence.

Unless prior approval is granted, any student who fails to submit assessment tasks worth in total 70% or more of the assessment for the unit will be deemed to have voided the unit.

4.3.10 LATE SUBMISSION OF ASSESSMENT

The following policy is to ensure equity for all students:

- All assessment tasks are expected to be submitted by the specified due date.
- Where marks are awarded for assessment tasks, a late penalty will apply unless an extension is granted. The penalty for late submission is 5% of possible marks per calendar day late, including weekends and public holidays, until a notional zero is reached. If an item is more than 7 days late, it receives the notional zero.
- Unless there are exceptional circumstances, students must apply for an extension to the specified due date in advance, providing due cause and adequate documentary evidence for late submission.

4.3.11 NOTIONAL ZEROS

Calculation of a notional zero is based on items submitted on time or with an approved extension. Where students fail to hand in assessment items for which marks are awarded, they will be awarded a notional zero for that assessment item. The notional zero will be a score, which lies between 0.1 of a standard deviation below the lowest genuine score for that item and zero.

4.3.12 PLAGIARISM AND DISHONESTY

The Board views seriously any breach of the rules or instructions governing assessment.

Any cheating, plagiarism, dishonesty, alteration of results or improper practice in relation to any school-based assessment in any subject accredited or registered by the Board shall constitute a breach of discipline. This includes any tampering with the assessment data on computer files by a student.

4.3.12.1 PLAGIARISM

Plagiarism is the copying, paraphrasing or summarising of work, in any form, without acknowledgement of sources, and presenting this as a student's own work.

Examples of plagiarism could include, but are not limited to:

- submitting all or part of another person's work with/without that person's knowledge
- submitting all or part of a paper from a source text without proper acknowledgement
- copying part of another person's work from a source text, supplying proper documentation, but leaving out quotation marks
- submitting materials which paraphrase or summarise another person's work or ideas without appropriate documentation
- submitting a digital image, sound, design, photograph or animation, altered or unaltered, without proper acknowledgement of the source.

RESOURCES AND WEBSITES

Study guide

<http://www.studygs.net/>

The Library, 2012, Canberra College cLc

<http://clc.act.edu.au/GroupRenderWiki.asp?GroupID=50816&ResourceId=172392> accessed 10.12.2012

How to Learn Maths

<http://www.wikihow.com/Learn-Math> accessed 7.2.2013

How to learn to love Maths

<http://www.guardian.co.uk/science/2012/jan/23/how-learn-love-maths> accessed 7.2.2013

30 Trusty tips

<http://www.tutorfi.com/math/learnmathskills> accessed 7.2.2013

Top 10 Strategies to improve your Maths Grade

http://www.mathgoodies.com/articles/improve_your_grades.html accessed 7.2.2013

Wolfram Alpha (Computational Knowledge engine)

<http://www.wolframalpha.com/> accessed 7.2.2013

Khan Academy (Maths videos)

<http://www.khanacademy.org/> accessed 7.2.2013

MyMaths (Website with maths explanation & questions - logon given in class)

<http://www.mymathsonline.com.au/>

Autograph Graphing and statistics software

This is available in the classroom and students can put it on their computer at home. The software and password can be put on a USB from the G drive of the student network and then taken home.

WRITING BIBLIOGRAPHIES

All your work will require correctly formatted bibliographies. Please ensure you use the information on the cLc Library page to help you. A summary table is below.

Please use this table as a guide - **you should not write your final bibliography in table form** but list each entry one after the other with a double space between each.

Separate each item by a comma eg Author, (Year), *Title*, Publisher, Place. Please note the date should be in brackets and titles in italics

They should be listed in **alphabetical order** by the author or title

Books

Author	Year	Title	Publisher	Place
--------	------	-------	-----------	-------

Encyclopaedias

Title	Year	Volumes	Place	Publisher
-------	------	---------	-------	-----------

Journals, Magazines and or Newspapers

Author	Year	Title of Article	Magazine Name	Issue Number/Date
--------	------	------------------	---------------	-------------------

Internet

Author or Title of Section	Year	Title of Website	Date you accessed it	URL
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Personal Communication

Name	Date	Address	Subject	Type of Communication
------	------	---------	---------	-----------------------

Film

Film Title	Film maker	Key Actors	Format eg DVD or Video	Distributor	Distribution Date
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REFERENCING

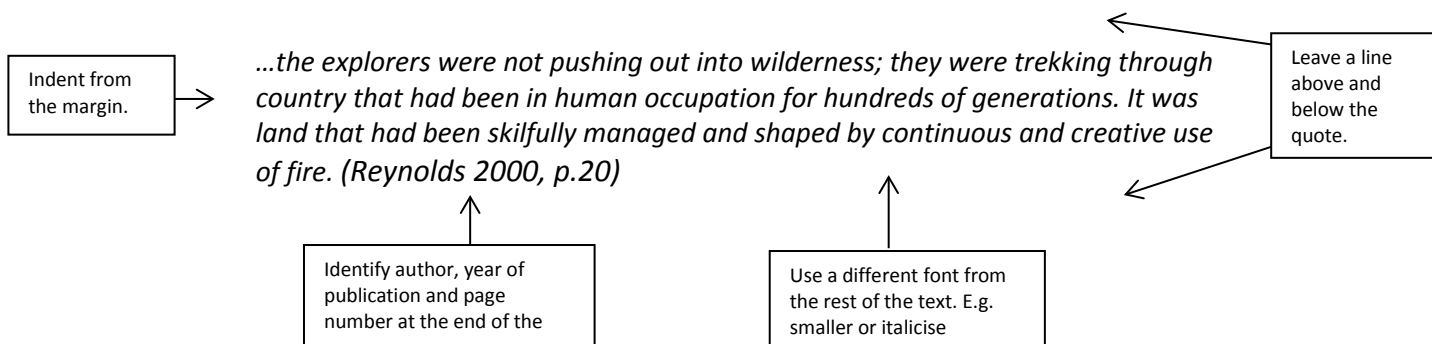
When writing an assignment you need to acknowledge other peoples' work that you use. This is called referencing. The college uses the modified Harvard style, where footnotes and endnotes are not required. Simply acknowledge where you found the quote or idea you used by including it in your paragraph. This is easier to use for the writer and enables the reader's eyes to continue with the natural flow from left to right.

TO QUOTE A LARGE PIECE OF TEXT

Quotations of **25 words or more** must be indented, and inverted commas are unnecessary in this case. The quotation must be introduced properly, not just placed in your writing isolated from the rest of your text.

Example:

At the time of the European colonisation the Australian landscape was portrayed as untouched wilderness. In fact, Indigenous Australian were using various techniques, particularly fire, to manage the land:



TO QUOTE A FEW WORDS FROM AN AUTHOR

Quotations of **fewer than 25 words** are to be placed in the body of the text and inverted commas must be used.

Example:

Computers, data communications and electronic control devices have had a large impact on society. "The widespread use of computers has been described as the second industrial revolution". (Bishop 1985, p. 213)

Place author name, year of publication and page number directly at end of the quote.

Or

Reynolds (2000) argues that the Australian landscape was "skilfully managed and shaped" (p. 20) by the Aboriginal people through the use of fire.

Where the author name occurs earlier in the sentence, give the year of publication with the author's name and the page number directly after the quote

Generally, small units of quotations are more effective. Try to weave at least some short quotations (under 25 words) into your text, rather than always using longer block quotations. This makes your writing more fluid and tends to give it added depth.

PARAPHRASING

Paraphrasing is using another person's ideas without quoting their exact words. In these situations you must still reference your source. You can either mention the author in your sentence or include their name in brackets.

Example:

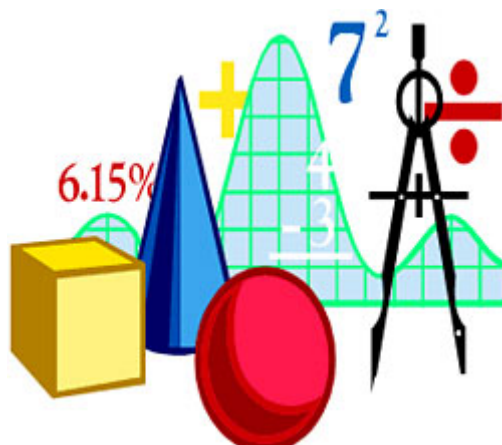
More recent studies, including those by Ward and Foot (1999, p.6), note increasing dissatisfaction with how the taxation system handles superannuation.

Or

One of the worst problems which affected Europe and Australia after World War 1 was the influenza epidemic in the 1920s. About 20 million people (Bereson 2000, p. 18) around the world died as well as 11,000 Australians (Australian Encyclopaedia 1996, p. 45). Many people panicked at the thought of infection.

INFORMATION ABOUT THE FACULTY

Head of Faculty (SLC): Jacob Woolley
Mathematics Faculty Phone Number: 6205 5786
To email a teacher use the following format:
firstname.lastname@ed.act.edu.au



Mathematics Courses at the Canberra College

MATHEMATICS AT THE CANBERRA COLLEGE FOR 2016

Name of Course	Type of Course	Experience by the End of Year 10
<p>Specialist Mathematics Integrating Australian Curriculum (T)</p> <p>You will need to be doing 2 lines of maths to undertake this course. It is intended for students of well above-average scholastic ability and performance in mathematics.</p>	<p>To study this course you must also undertake a major in Maths Methods</p> <p>Double Major, Major Minor Once combined with methods major</p>	<p>Unicorn, Lexus or ACE Grade A or B Level 1 or Extended Grade A</p>
<p>Mathematical Methods Integrating Australian Curriculum (T)</p> <p>It is expected that students will have demonstrated a high level of aptitude and achievement in high school mathematics studies. Students are expected to have strong algebra skills. An Advanced Methods course may also be available for 2016. This would be for students considering specialist Maths. Students may study this course concurrently with the Mathematical Applications course that integrates the Australian Curriculum.</p>	<p>Major, Minor Must do a major in methods if doing specialist</p>	<p>Level 1 Grade A or B Extended level Grade A or B</p>
<p>Mathematical Applications Integrating Australian Curriculum (T)</p> <p>It is expected that students will have demonstrated an interest in high school mathematics and a moderate to high level of achievement. Students may study this course concurrently with the Mathematical Methods course that integrates the Australian Curriculum.</p>	<p>Major, Minor</p>	<p>Level 1 or extended level Grade B, C or D Level 2 Grade A or B or C</p>
<p>Essential Mathematics integrating Australian Curriculum (A)</p> <p>This course is intended for students who wish to study mathematics in a more practical way. It is suitable preparation for entry to the workforce and for many apprenticeships</p>	<p>Major, Minor</p>	<p>Core or Level 2 or Level 3</p>

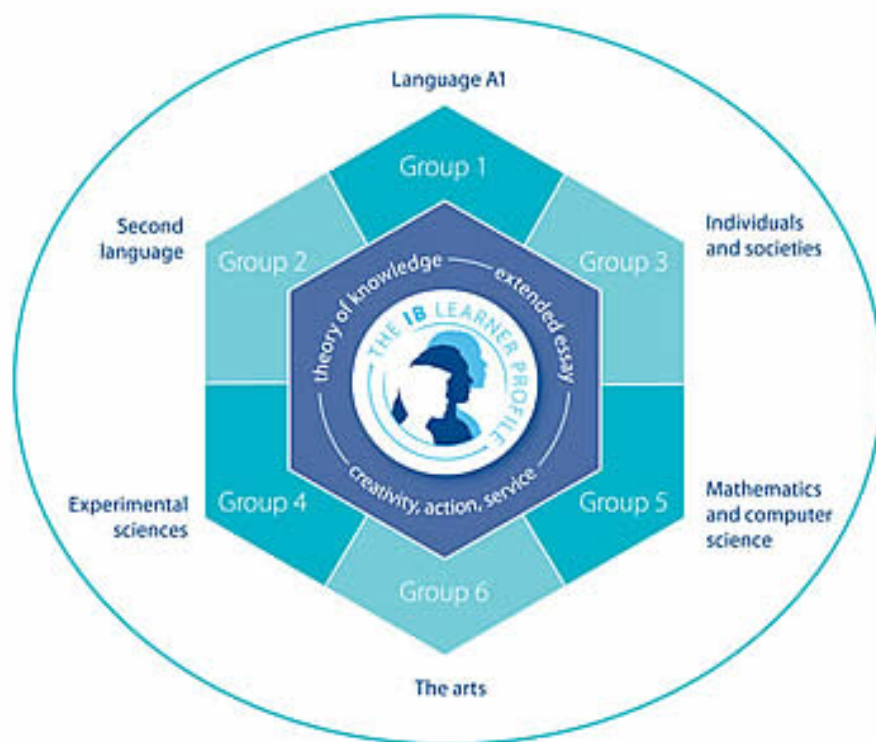
IB Mathematics

Levels

IB mathematics is offered at:

- Higher Level
- Standard Level
- Studies Level

The majority of the work is incorporated into the ACT Mathematics courses. The remainder of the work is taught in IB Maths Tutorials. These tutorials mostly run during year 12.



Tertiary Mathematics courses require the use of Graphics Calculators.

College policy requires all Tertiary students to have a Graphics Display Calculator. These may be purchased or leased from the Mathematics Faculty.

Mathematics Enrichment

Double major in Specialist Mathematics

Maths camp



Australian Mathematics Competition

NSW University Mathematics competition

Australian Informatics competition

Maths Tutorials

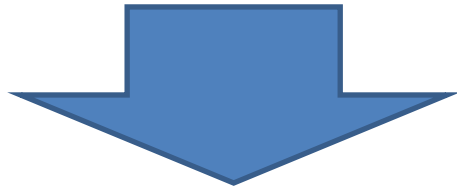
Every week there is a maths tutorial, held in the Library.

These tutorials work on a drop in approach. Students can drop in for all or some of the time and ask for individual help. Times will be announced each semester. It is a good time to go and do homework in the library and have help at hand.

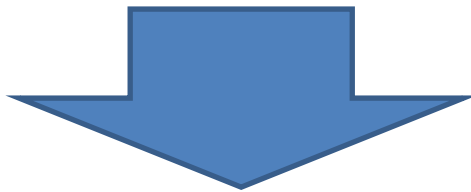
The Internet is a Powerful Learning Tool for Mathematics Students

The Google logo, featuring the word "Google" in its characteristic multi-colored font (blue, red, yellow, blue, green, red).The YouTube logo, consisting of the word "You" in black and "Tube" in white on a red rounded rectangle background.The WolframAlpha logo, featuring the text "WolframAlpha" in a large, orange, serif font, with "computational knowledge engine" in a smaller, orange, sans-serif font below it.The text "MyMaths" in a blue, sans-serif font.The Oxford University Press logo, featuring the text "OXFORD UNIVERSITY PRESS" in white on a dark blue background.

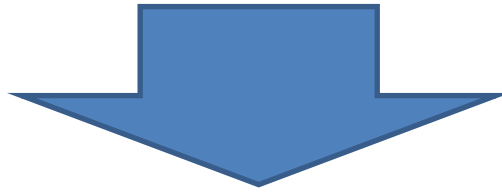
Success in Mathematics



Ensure you attend all classes on time with equipment



Be an active and productive member of class



Consolidate concepts by doing extra practice and using a wide range of resources out of class on a regular basis



Make a serious attempt at assessment items

Quotes to inspire Success in learning Mathematics

“There are a few naturally talented mathematicians, but for the majority of us, success in maths relies on practice. That’s why maths texts have so many questions in each exercise.” P. Lafferty 2012

“All the so-called "secrets of success" will not work unless you do.” ~Author Unknown

“You cannot plough a field by turning it over in your mind.” ~Author Unknown

“I am a great believer in luck. The harder I work, the more of it I seem to have. ~Coleman Cox, 1922

“Character is what emerges from all the little things you were too busy to do yesterday, but did anyway.” ~Mignon McLaughlin, *The Second Neurotic's Notebook*, 1966

“The difference between try and triumph is a little umph.” ~Author Unknown

“The person who is waiting for something to turn up might start with their shirt sleeves. “ ~Garth Henrichs

“The only place where success comes before work is in the dictionary. “ ~Attributed to both Vidal Sassoon and Donald Kendall

“Some people dream of success... while others wake up and work hard at it.” ~Author Unknown

“People know you for what you've done, not for what you plan to do.” ~Author Unknown

“Success is a ladder you cannot climb with your hands in your pockets.” ~American Proverb

“If you hear a voice within you say “you cannot paint,” then by all means paint, and that voice will be silenced”. – Vincent Van Gogh

“If a window of opportunity appears, don’t pull down the shade”. - Tom Peters

“Great effort springs naturally from a great attitude”. - Pat Riley



A.S.P.I.R.E.

A: Approach/attitude/arrange

- Approach your studies with a positive attitude
- Arrange your schedule to eliminate distractions

S: Select/survey/scan

- Select a reasonable chunk of material to study
- Survey the headings, graphics, pre- and post-questions to get an overview
- Scan the text for keywords and vocabulary: mark what you don't understand

P: Piece together the parts:

- Put aside your books and notes
- Piece together what you've studied, either alone, with a study pal or group: summarize what you understand.

I: Investigate/inquire/inspect:

- Investigate alternative sources of information you can refer to: other text books, websites, experts, tutors, etc.
- Inquire from support professionals (academic support, librarians, tutors, teachers, experts,) and other resources for assistance
- Inspect what you did not understand.

R: Reexamine/reflect/relay

Reexamine the content | Reflect on the material | Relay understanding

- Reexamine:
What questions are there yet to ask? Is there something I am missing?
- Reflect:
How can I apply this to my project? Is there a new application for it?
- Relay:
Can I explain this to my fellow students? Will they understand it better if I do?

E: Evaluate/examine/explore:

- Evaluate your grades on tests and tasks: look for a pattern
- Examine your progress: toward achieving your goals
- Explore options: with a teacher, support professional, tutor, parent if you are not satisfied.

HOW TO SEEK AN EXTENSION

- Talk to classroom teacher well before the due date
- Confirmation from home required
- If ongoing, seek advice from Student Services

SUBMISSION OF WORK

LATE SUBMISSION OF WORK

All students are expected to submit assessable work on time. Students are also encouraged to complete work, even if it is late, as there are educational benefits in doing so. The purpose of the following policy is to ensure equity for all students.

1. Except in exceptional circumstances, students must apply **in advance** for an extension to a due date, providing due cause and adequate documentary evidence.
- 2a. Calculation of a *notional zero* (see below) in “T” units is based on items submitted on time or with an approved extension (i.e. a genuine score).
 - b. A late penalty will apply unless an extension is granted. The penalty for late submission is 5% (of possible marks) per calendar day late (**including weekends and public holidays**) until the notional zero, calculated in (a), is reached. If an item is more than 7 days late, it receives the *notional zero*. **Submission on weekends or public holidays is not acceptable.**
3. The Principal may exercise discretion in the application of the late penalty in special circumstances, with satisfactory documentation.
4. It may not be possible to grade or score work submitted late, if it is submitted after marked work in a unit has already been returned to other students. **(BSSS 3.3.4.9.3)**

Penalty to be applied:

	<i>Due Monday</i>
<i>Received Monday</i>	0
<i>Received Tuesday</i>	5%
<i>Received Wednesday</i>	10%
<i>Received Thursday</i>	15%
<i>Received Friday</i>	20%
Saturday	
Sunday	
<i>Received Monday</i>	35%
<i>Received Tuesday</i>	<i>Notional Zero (see below)</i>
<i>Received Wednesday</i>	<i>Notional Zero</i>

- Computer failure will **not** be accepted as a valid reason for late work. Make sure you backup, keep hard copies and rough notes.
- Items transmitted **electronically (only if prior arrangement with your teacher)** must be submitted by 4:00 pm on the due date or the above Late Policy will apply.

BREAKING TWO YEARS AT COLLEGE INTO SMALL BLOCKS

Two years of working very hard to achieve a good year 12 Certificate and/or ATAR can be daunting.

The secret is to break the time into smaller blocks. Semester 1 has 18 weeks of formal classes and then a test week. In this semester there are a few public holidays. Break the semester into small blocks.

During each block put in consistent hard work and then at the end of a block have a rest. During a block you may need to reduce TV, computer games, social media and other leisure activities. If you try this for one small block the feeling of achievement will spur you on for the next small block.

In semester 2 there is 16 weeks of formal classes and then a test week. There are not as many holidays but it is a shorter time. Again break it up into smaller blocks and work really hard in each block.



HOW TO REVISE FOR A MATHS TEST

Tests make up the majority of assessment for all Mathematics units at Canberra College. To succeed in Mathematics you need to do well in the tests. Here are some suggestions that may help you:

- You need to make an effort across the whole unit. Maths skills build on previous maths skills so you can't learn it all at the last minute.
- Keep well organised notes and resources.
- Make an A4 summary sheet of the units work. It may be best to start with a bigger summary and then summarise down to the A4 sheet. Use your workbook and textbook to help make the summary.
- Ensure you practise doing questions (this is what you will do in the test).
- Make sure you are on top of all your basic skills before worrying about harder concepts.
- Make use of Maths tutorials throughout the semester to assist with problem areas.
- Complete all the set revision from your teacher.
- Make a practise test for your friend and swap (this can be done using textbook questions).
- Help someone else with a concept (you will learn a lot when you try to teach something to someone else).
- Use MyMaths to practise questions or look up concepts.
- Youtube and the Kahn Academy have many videos to assist you learn a concept.
- Closer to the test plan out your revision time carefully.
- Make sure you drink plenty of water, eat well and get plenty of sleep.
- Once in the test:
 1. Have a quick look through the test.
 2. Start on questions you are confident that you can do. You don't have to start at question 1.
 3. Make sure you set out a good solution don't just put an answer.
 4. For more difficult questions try and get something down.
 5. Don't spend too long on any question.
 6. Use all the test time and check answers if you have time.
 7. When writing the final answer for a long solution look back at the question and ensure you are answering what the question asks.



MATHS TAKE HOME ASSIGNMENTS

- Working hard in and out of class in the lead up to an assignment will see you well set up for success
- Read over the assignment several times on the first day you get it
- Talk to classroom teacher well before the due date about any issues
- In the first couple of days check you have access to all the needed resources
- Start by jotting down ideas and finding information.
- Then plan out what you are going to do.
- Put together your first draft of the assignment.
- Look over the draft and make edits. Look at the questions, marks and rubric to ensure you have answered what has been asked.
- Make edits.
- Then get someone else to read it (**not** someone doing the same assignment)
- Make sure you have a completed cover sheet.
- Make sure you have a copy of the assignment for yourself.
- Submit the assignment and get a receipt
- Maths Tutorials are available every week, held in the Library. These tutorials work on a drop in approach. Here you may find extra help with your assignment.
- Make sure it is your own work. Plagiarism can lose you many marks. Also if you have completed the work you will have gained the benefits of learning.

MATHS IN-CLASS ASSIGNMENTS

- It is vital you work hard in and out of class in the lead up to the in-class.
- Most in-class assessments are open workbook. So make sure your workbook is up to date and well organised
- Even though they are open book it is still important to do some revision. Go over your notes, practise questions and work on any weaknesses
- On the day make sure you have all your equipment. This includes a graphics calculator, writing materials and any allowable written material.
- In class assessments may have a component testing skills but the majority of the assessment will be focused on an application of the skills you have learnt.
- Read over the questions carefully.
- Try and work out how the skills you have learnt can be applied to the problems.
- Use your time wisely and ensure you answer as much as you can.
- If you have time read back over your work and look for edits you can make.
- For some problems you can think of a similar but simpler example and then look at how you would work it out. Then apply this to the question asked.

MATHS A4 Summary Sheets for tests

- In most tests students are allowed to bring a 1 sided A4 sheet of hand written notes. This must **not** include any examples.
- The reason for doing this sheet is so you don't have to remember all the formulas and rules but also so you go through the process of summarising all the work covered for the unit. It is the process of summarising that is more useful than the summary itself.
- Here are some steps to creating a good summary sheet:
 1. Make sure you have all the notes for a units work. This needs to happen across the unit.
 2. Make sure you are working in and out of class across a unit. You should also be seeking help when you are having difficulties. This will mean you are summarising familiar work rather than trying to learn it for the first time.
 3. A good idea is to have a time each week when you make a summary of the last weeks work.
 4. When you have finished the work for the unit and you are up to revising the first piece of revision you should do is make your summary sheet even if it is a first draft. This will mean you have the summary sheet while doing all the revision questions. This will mean you have time to do a lot more questions. You will also find out where your A4 sheet is lacking and you can add further points. You can then write out a final draft of your A4 sheet the night before the test.
 5. To make the summary you should look through the notes and textbook on each topic. A good way to do it is to go through each lesson. Each lesson usually has a key idea. Write down the key idea and any formula you need. It is also a good idea to write down calculator steps.
 6. While making your A4 sheet, on a separate piece of paper you could put types of questions under topic headings. This can't be brought into the test but would help with your revision.
 7. Most text books have summaries of formulae either within each exercise or the end of a chapter. These can be good to check you have nothing missing.
 8. You should also refer to your unit outline and revision guide (this will be given to you by your teacher) to make sure nothing is missing.
 9. MyMaths also has lessons on most topics covered that may be useful when making your summary sheet.
 10. Take your time making the sheet as the process of making the sheet is very important.

