



MATHEMATICS STANDARD

*CONTENT ANALYSIS &
SYLLABUS REVIEW*

**FREE ONLINE
HSC STUDY
SESSIONS**



GET THE MOST OUT OF YOUR *HSC STUDY SESSIONS*

FREE ONLINE HSC STUDY SESSIONS

28 SEPTEMBER - 7 OCTOBER 2026

**WESTERN SYDNEY
UNIVERSITY**



DATE	SESSIONS		
	9:30 - 11:30AM	12:00 - 2:00PM	2:30 - 4:30PM
MONDAY 28 SEPTEMBER	English Advanced Subject Review	Physics Subject Review	English Advanced Exam Deconstruction
	English Standard Subject Review	Visual Arts Subject Review	English Standard Exam Deconstruction
TUESDAY 29 SEPTEMBER	Mathematics Advanced Subject Review	12:00 - 12:30PM	Mathematics Advanced Exam Deconstruction
	Mathematics Standard Subject Review	UNII01: Introduction to University	Mathematics Standard Exam Deconstruction
WEDNESDAY 30 SEPTEMBER	Biology Subject Review Business Studies Subject Review	Community & Family Studies Subject Review	Biology Exam Deconstruction Business Studies Exam Deconstruction
TUESDAY 6 OCTOBER	Health and Movement Science Subject Review Legal Studies Subject Review	Chemistry Subject Review	Health and Movement Science Exam Deconstruction Legal Studies Exam Deconstruction
WEDNESDAY 7 OCTOBER	Studies of Religion I Subject Review	Modern History Subject Review	Q&A Session



WEDNESDAY 19th OCTOBER 2026

21 days

9.20 am



Test Kit Ready.....



We are a two-year examinable course with common content assessed alongside Mathematics Advanced and Mathematics Standard 1 students

	Preliminary Content	Common Content 
2019	40%	NA
2020	18%	23%
2021	23%	28%
2022	21%	20%
2023	27%	21%
2024	30%	21%
2025	30%	23%

This table outlines each syllabus area mark allocation over the past seven years.

	Financial Mathematics	Measurement	Algebra	Statistical Analysis	Networks
2019	21	30	19	20	10
2020	21	31	15	20	13
2021	21	30	19	21	9
2022	22	33	10	24	11
2023	27	28	15	18	12
2024	26	28	14	21	11
2025	23	30	12	23	12

Working mathematically through communicating reasoning, understanding and fluency, and problem solving

	Year 11 Mathematics Standard	Year 12 Mathematics Standard 1	or	Year 12 Mathematics Standard 2
Algebra	Formulas and equations Linear relationships	Algebraic relationships		Algebraic relationships
Financial mathematics	Earning money Managing money	Investment Depreciation and loans		Investment and loans Annuities
Measurement	Applications of measurement Time and location	Right-angled triangles Ratios and rates		Trigonometry Ratios and rates
Networks	Networks, paths and trees			Network flow Critical path analysis
Statistics	Data analysis	Bivariate data analysis Relative frequency and probability		Bivariate data analysis Relative frequency and probability The normal distribution

Band 6.... Can I get one?

Band 6

- Demonstrates **extensive knowledge** and skills appropriate to the course
- Applies appropriate mathematical concepts, skills and techniques **consistently and accurately** in a **wide range** of familiar and unfamiliar contexts
- Selects and uses a **wide variety** of problem-solving strategies to solve mathematical problems
- Demonstrates mathematical **reasoning and justification**, and interprets and **analyses** mathematical models
- **Communicates effectively** using appropriate mathematical language, notation, diagrams and graphs

Band 5

- Demonstrates **thorough knowledge** and skills appropriate to the course
- Applies appropriate mathematical concepts, skills and techniques **accurately** in a **range** of familiar and unfamiliar contexts
- Selects and uses a **variety** of problem-solving strategies to solve mathematical problems
- Demonstrates mathematical **reasoning** and interprets mathematical models
- **Communicates** using appropriate mathematical language, notation, diagrams and graphs

Band 6.... Can I get one?

Band 4

- Demonstrates **sound knowledge** and skills appropriate to the course
- Uses mathematical concepts, skills and techniques in familiar and **some unfamiliar** contexts
- Uses **problem-solving strategies** to solve mathematical problems
- Uses some mathematical reasoning **and mathematical models**
- **Communicates** using **some appropriate** mathematical language, notation, diagrams and graphs

Band 3

- Demonstrates **basic knowledge** and skills appropriate to the course
- Uses mathematical concepts, skills and techniques in **familiar** contexts
- Uses **some** mathematical **reasoning**
- Uses **some mathematical language**, notation, diagrams and graphs

Advice from the Marking Team....

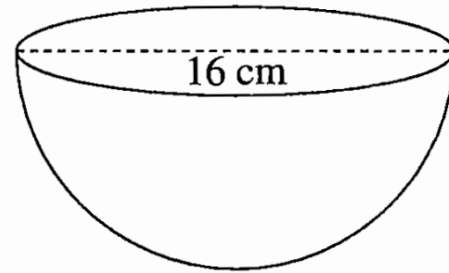
Students should:

- ✓ show relevant mathematical reasoning and/or calculations
- ✓ read the question carefully to ensure that they do not miss important components of the question
- ✓ have a clear understanding of key words in the question and recognise the intent of the question and its requirements, such as show, solve, evaluate, hence, calculate
- ✓ use the Reference Sheet where appropriate
- ✓ ensure the solution is legible and follows a clear sequence
- ✓ engage with any stimulus material provided and refer to it in their response when required by the question
- ✓ check their solution answers the question
- ✓ round off numerical solutions only at the final step of the solution
- ✓ construct graphs neatly, with precision and display all relevant information as required by the question
- ✓ interpret information presented in graphs across a range of contexts
- ✓ understand when to use relevant calculator functions
- ✓ carefully note any information in the questions which supplies units of measurement.

Band 6.... What does a solution look like?

<https://educationstandards.nsw.edu.au/wps/portal/nesa/11-12/resources/hsc-standards-materials/mathematics/maths-std2-hsc-standards-materials>

A bowl is in the shape of a hemisphere with a diameter of 16 cm.



2 marks

What is the volume of the bowl, correct to the nearest cubic centimetre?

$$V = \frac{2}{3} \pi r^3$$

$$= \frac{2}{3} \times \pi \times 8^3$$

$$= 1072.38 \text{ cm}^3$$

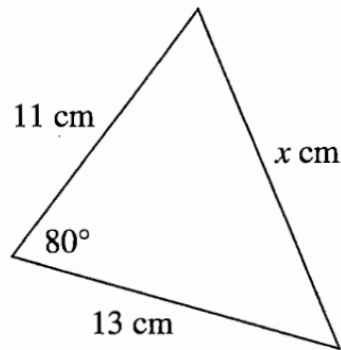
$$= 1072 \text{ cm}^3$$

- ✓ Reference Sheet formula shown
- ✓ Substitution clearly shown
- ✓ Equal signs underneath each other in a clear and logical manner
- ✓ Calculator display provided (although 4-5 decimal places recommended)
- ✓ Rounding checked and actioned

Band 6.... What does a solution look like?

<https://educationstandards.nsw.edu.au/wps/portal/nesa/11-12/resources/hsc-standards-materials/mathematics/maths-std2-hsc-standards-materials>

The diagram shows a triangle with sides of length x cm, 11 cm and 13 cm and an angle of 80° .



3 marks

NOT TO
SCALE

Use the cosine rule to calculate the value of x , correct to two significant figures.

$$a^2 = b^2 + c^2 - 2bc \cos A$$

$$a^2 = 11^2 + 13^2 - 2(11)(13) \cos 80$$

$$a^2 = 290 - 49.66337881$$

$$a^2 = 240.3366212$$

$$a = 15.503 \text{ cm}$$

$$x = 15.50 \text{ cm}$$

- ✓ Reference Sheet formula shown
- ✓ Substitution clearly shown
- ✓ Equal signs underneath each other in a clear and logical manner
- ✓ Square root implied when $a^2 =$ changes to $a =$
- ✓ Not rounded until final answer (the calculator work between Line 2 and 3 not required)
- × Rounding checked, however misinterpreted to decimal places
- × Clarity in 3's suggested

WMFI



There is no point in completing past HSC papers, if you don't know what to do with them after you have completed them.

W – Write

M – Mark

F – Feedback

I – Improve

A tried and tested approach to nailing HSC preparation.

Write

In this step, we complete the past HSC paper.
You should:

1. Find a quiet environment away from distractions
2. Clear the desk – only items permitted on the desk are:
 - Student ID (if you have one)
 - Your clear plastic case with your pens, highlighters, pencil, ruler etc
 - Scientific Calculator
 - Water bottle
 - Basic watch – no smart watches permitted
 - No MUSIC!

If you cannot lock away 150 minutes in one chunk, complete the paper in monitored chunks with a total of 150 minutes working time





Mathematics Standard ^

[Mathematics Standard 2023 HSC exam pack](#)
[Mathematics Standard 2022 HSC exam pack](#)
[Mathematics Standard 2021 HSC exam pack](#)
[Mathematics Standard 2020 HSC exam pack](#)
[Mathematics Standard 2019 HSC exam pack](#)

Download Papers

Mathematics Standard 1 HSC exam paper 2023
1000KB, 38 Pages

Mathematics Standard 2 HSC exam paper 2023
924KB, 42 Pages

Mathematics Standard 1 HSC marking guidelines 2023
4964 KB, 21 Pages

Mathematics Standard 2 HSC marking guidelines 2023
4447 KB, 25 Pages

Question 31 (a)

Criteria	Marks
• Correctly identifies TWO critical paths	2
• Identifies a critical path, or equivalent merit	1

Sample answer:

Critical paths are H, I, G, C and H, I, K

Question 31 (b)

Criteria	Marks
• Provides correct answer	2
• Shortens a task on the critical path by 3 hours, or equivalent merit	1

Sample answer:

Decrease one task by 3 hours.

H and I are common.

H is only 2 hours.

So task I should take 4 hours.

Mark

In this step, you mark the completed HSC paper against the marking criteria. You may ask a peer or teacher to assist you in this step. You should:

Mark your answers in accordance to the marking guidelines set by NESA.

HSC Marking Feedback

Select from the link(s) below to view feedback about how students performed in this year’s examination.

Use the feedback to guide preparation for future examinations. Feedback includes an overview of the qualities of better responses. Feedback may not be provided for every question.

Feedback on written examination

Section II

- View the [Mathematics Standard 1-HSC Marking Feedback 2023](#) (254 KB, 8 pages)
- View the [Mathematics Standard 2 -HSC Marking Feedback 2023](#) (232 KB, 10 pages)

Question 31

In better responses, students were able to:

- find the critical paths
- draw the route on the diagram with a highlighter
- use forward and backward scanning to determine the earliest starting time (EST) and latest starting time (LST) for each activity and use boxes on the network to clearly show this
- understand that if a question states that there are two critical paths then there will be two paths of the same length
- name the task, from part (a) and give the time with reasoning
- identify the need to reduce an activity by 3 means the activity had to be greater than 3.

Areas for students to improve include:

- recalling how to find the EST and LST
- understanding when to use minimum cut or spanning tree or LST / EST
- understanding the task needed to be greater than 3.

Feedback & Improve

In this step, you will gain feedback from the marker – a peer or a teacher.

You should:

1. Read through feedback and write your own notes on what went wrong and how will you improve your answer next time. A table like the one on the right may prove beneficial.
2. Reflect on the type of errors you made
3. Make a record of the quality of your answers
 - ☐ Non-attempt
 - ☐ Low confidence
 - ☐ Difficult but doable
 - ☐ Comfortable, and confident

Question	What went wrong?	Next time, I'll improve by.....

So what went wrong? Some ideas.....

I misunderstood the question
 I didn't communicate my answer clearly
 I made a careless error in my calculations
 I couldn't remember what I had to do
 I ran out of time

Improvement measures..... Some ideas.....

Utilise my highlighters to highlight key facts
 Add information to the given diagram or draw a diagram
 Have a clearer understanding of what is on my Reference sheet
 Practise a key skill eg. Changing the subject of the formula
 Check my rounding is correct

The Reference Sheet and Measurement

MS-M1.1 – Practicalities of measurement

MS-M1.2 – Perimeter, area and volume

MS-M6 – Non-right-angled Trigonometry



NSW Education Standards Authority

2020 HIGHER SCHOOL CERTIFICATE EXAMINATION

Mathematics Standard 1
Mathematics Standard 2

REFERENCE SHEET

Measurement

Limits of accuracy

$$\text{Absolute error} = \frac{1}{2} \times \text{precision}$$

$$\text{Upper bound} = \text{measurement} + \text{absolute error}$$

$$\text{Lower bound} = \text{measurement} - \text{absolute error}$$

Length

$$l = \frac{\theta}{360} \times 2\pi r$$

Area

$$A = \frac{\theta}{360} \times \pi r^2$$

$$A = \frac{h}{2}(a + b)$$

$$A \approx \frac{h}{2}(d_f + d_l)$$

Surface area

$$A = 2\pi r^2 + 2\pi rh$$

$$A = 4\pi r^2$$

Volume

$$V = \frac{1}{3}Ah$$

$$V = \frac{4}{3}\pi r^3$$

Trigonometry

$$\sin A = \frac{\text{opp}}{\text{hyp}}, \quad \cos A = \frac{\text{adj}}{\text{hyp}}, \quad \tan A = \frac{\text{opp}}{\text{adj}}$$

$$A = \frac{1}{2}ab \sin C$$

$$\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C}$$

$$c^2 = a^2 + b^2 - 2ab \cos C$$

$$\cos C = \frac{a^2 + b^2 - c^2}{2ab}$$

Financial Mathematics

$$FV = PV(1 + r)^n$$

Straight-line method of depreciation

$$S = V_0 - Dn$$

Declining-balance method of depreciation

$$S = V_0(1 - r)^n$$

Statistical Analysis

An outlier is a score
less than $Q_1 - 1.5 \times IQR$
or
more than $Q_3 + 1.5 \times IQR$

$$z = \frac{x - \mu}{\sigma}$$

Normal distribution



- approximately 68% of scores have z-scores between -1 and 1
- approximately 95% of scores have z-scores between -2 and 2
- approximately 99.7% of scores have z-scores between -3 and 3

The Reference Sheet and Financial Mathematics

MS-F4.1 – Investments

MS-F1.1 – Interest and depreciation

MS-F4.2– Depreciation and loans



NSW Education Standards Authority

2020 HIGHER SCHOOL CERTIFICATE EXAMINATION

Mathematics Standard 1
Mathematics Standard 2

REFERENCE SHEET

Financial Mathematics

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Straight-line method of depreciation

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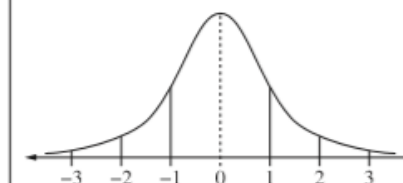
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The Reference Sheet and Statistical Analysis

MS-S1.2 – Summary statistics

MS-S5 – The normal distribution



NSW Education Standards Authority

2020 HIGHER SCHOOL CERTIFICATE EXAMINATION

Mathematics Standard 1
Mathematics Standard 2

REFERENCE SHEET

Measurement

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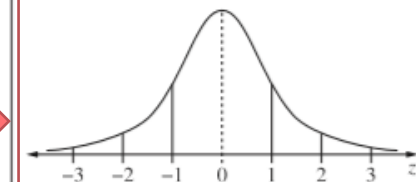
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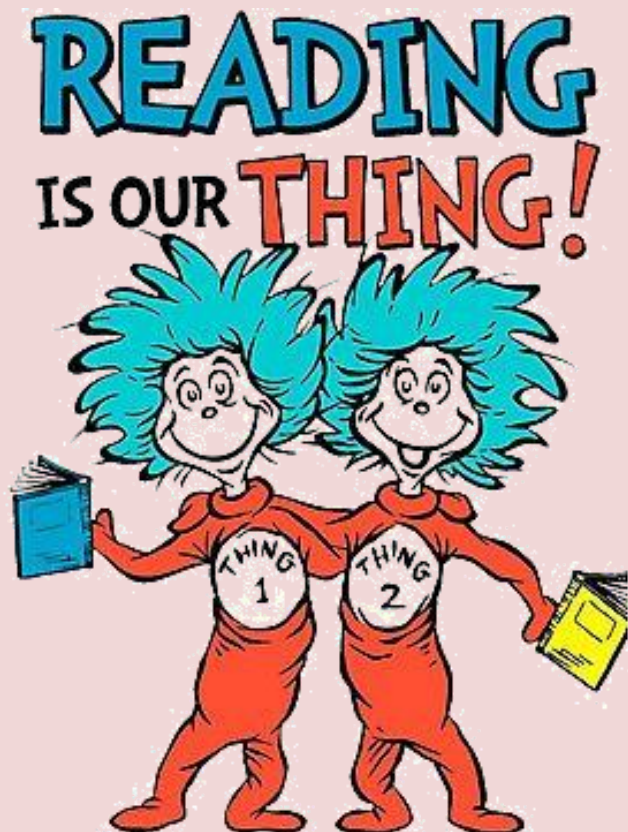
Wait, what 10 minutes.....

This time will fly and could be a game changer for examination success.

Failing to plan, is planning to fail!

1. Look for the NESA markings for half way etc.....
2. Go straight to Section 2 and read through the questions to find the 'easy marks'. These will be the questions you will complete first.
3. Progress to Section 1 and begin to mentally answer those questions you can to buy some time for harder concepts in Section 2

Remember – no writing on or marking your paper in any way. We read with our eyes only!



125 minutes for 85 marks.....

- ✓ This equates to approximately 1.47 minutes per mark
- ✓ Read each question in its entirety (all parts) before marking anything then again to highlight key information.
- ✓ Show your working:
 - ☐ Clear, concise, logical manner – effort should match mark allocation
 - ☐ Cross out incorrect working with one clear line
 - ☐ When using your calculator, write your full calculator display and then your rounded answer (when required)
 - ☐ Check your answer makes sense
 - ☐ Move on to the next question
 - ☐ If you run out of space – ask for an extra writing booklet and label the question/s answered clearly

2023 HIGHER SCHOOL CERTIFICATE EXAMINATION

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Centre Number

Mathematics Standard 2

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Student Number

Section II Answer Booklet

85 marks
Attempt Questions 16–38
Allow about 2 hours and 5 minutes for this section

- Instructions**
- Write your Centre Number and Student Number at the top of this page.
 - Answer the questions in the spaces provided. These spaces provide guidance for the expected length of response.
 - Your responses should include relevant mathematical reasoning and/or calculations.
 - Extra writing space is provided at the back of this booklet. If you use this space, clearly indicate which question you are answering.

Please turn over

Ready to charge *towards* change?

KEEP IN TOUCH

CONTACT US IF YOU HAVE ANY QUESTIONS

→ hscstudy@westernsydney.edu.au

→ 1300 668 370

→ Call, email, tag. We're here to help.

