Diploma Programme

MAC IB Exam Session Guide May 2023

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Some important advice

- ✓ Know your candidate session number.
- ✓ Read the IB poster *Conduct of the examinations: notice to candidates*. If you have any questions about what it says, ask your coordinator.
- ✓ Take only authorized material into the examination room. If you are found in possession of unauthorized material (for example, notes, a mobile/cell phone) even by mistake, you will be in breach of the IB regulations.
- ✓ Write in dark blue or black ink only. Do not use gel pens. The use of colour is only permitted in geography examinations.
- ✓ Draw a line through any plans or working out that you do not want marked.
- ✓ At the end of the examination, place the below material (where applicable) together in the following sequence:

  - the blue coversheet at the front
  - the examination paper (but **only** if this is the kind of examination paper in which you write answers)
  - the answer booklet(s)
  - squared paper (used in Chinese/Japanese language examinations)
  - graph paper

  Secure the above material together with a string tag.

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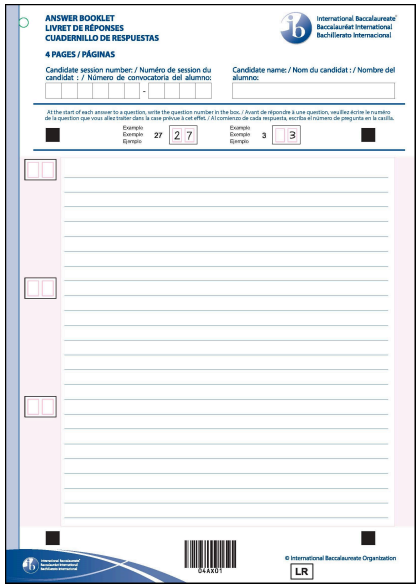
Answer Booklet Guide



Introduction

This guide has been produced to help you as a candidate become familiar with using answer booklets in IB Diploma Programme and Career-related Programme examinations.

What does the answer booklet look like?

Each booklet consists of four pages. On the top of the front page there are sections in which to indicate your session number and name, along with brief instructions on how to correctly write question numbers. The remainder of this page and all other pages are for you to write your answers to examination questions. Please remember to write your answers on the lines, keeping within the large pink box on each page. Beside the lines for your answers are boxes in which you must write the number of each question you answer.

Completing your session number and name

Before you begin writing answers to questions, please write your candidate session number and name in the appropriate boxes on the first page. If you do not know your session number, ask the examination invigilator. Your session number and name must appear on the front page of each booklet you use.

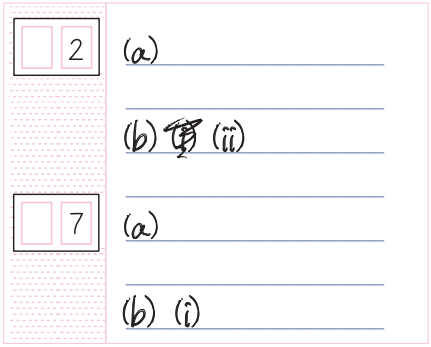
Completing the boxes

You must ensure you have written the question number correctly before you begin writing each of your answers.

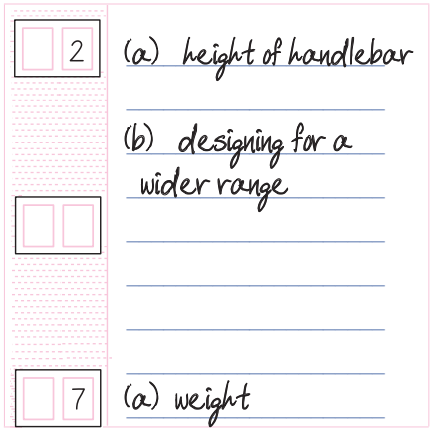
Where a question is split into part numbering, for example (a), (b), (c) or (i), (ii), you must write this on the line at the start of your answer. It is not necessary to indicate the question number more than once for questions that are split into part numbering, and there is no need to write the name of the section, topic or theme that you are answering from (see **Example 1**).

If your answer goes over more than one page, there is no need to write the question number again at the top of each new page.

Example 1



Example 2



Leave at least one line space between each answer. If there is not one line space available between the last line of your answer and the next question number box, go to the next available question number box and start your next answer there (see **Example 2**).

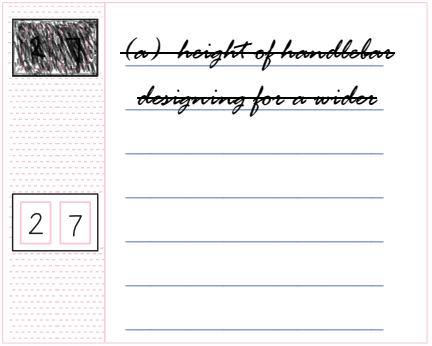
If you make a mistake when writing your question number, fill in the question number box and use the next available box.

If you make a mistake

If you make a mistake when writing your question number, fill in the question number box and use the next available box.

If you start writing an answer to a question and then decide you are going to answer a different question altogether, fill in the question number box in addition to putting a line through the wrong answer. Write the question number of the new answer in the next box and begin your answer again (see **Example 3**).

Example 3

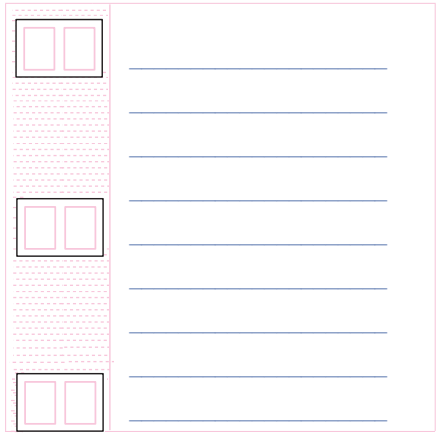


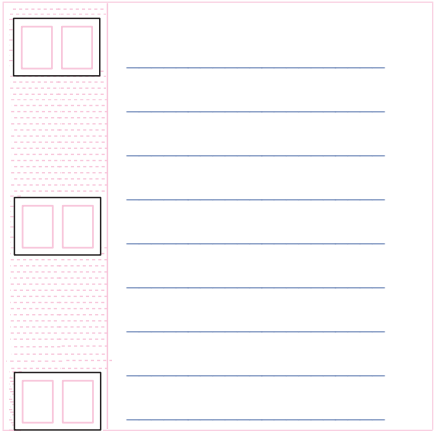
If you run out of space

If you run out of space in your answer booklet, ask the invigilator for a new booklet and complete your session number and name on the front page. If you are continuing with an answer that you started in your first booklet, write the question number again in the new booklet before continuing with your answer.

If you need to go back and write more for any of your answers at any stage, go to the end of the last answer that you wrote in your answer booklet. In the next available box, write the question number again and then continue your answer.

Practice





Diploma Programme

Career-related Programme

Conduct of the examinations

Notice to candidates

- You must arrive in good time for the start of an examination and may not be allowed to sit the examination if you arrive late.
- Your coordinator/invigilator will decide where you will sit during an examination. You must remain seated until permission is given to leave the examination room.
- You may only take to your desk/table the following items:
    - General stationery, for example, black/blue pen, pencil, eraser, geometry instruments, ruler. Correcting fluid and gel pens are not permitted.
    - Materials specified by the IB as required for a particular examination, for example, an electronic calculator, a clean copy of a case study and/or data booklet.
    - A bilingual translation dictionary for non-modern language examinations, that does not contain notes of any kind.
- Your coordinator/invigilator has the right to inspect and confiscate any item you bring into the examination room. This includes electronic calculators, which should be set to test mode (when applicable).
- Follow all the instructions from your coordinator/invigilator.
- Your coordinator/invigilator has the right to remove you from the examination room if your behaviour interferes with the examination.
- In cases of emergency, and with the permission of your coordinator/invigilator, you may be allowed to temporarily leave the examination room. You will remain supervised at all times.
- If you decide to leave the examination room before the scheduled finishing time, you will not be allowed to return.

- You must not attempt to obtain information about the content of an examination in advance.
- If you find that you have accidentally taken unauthorized material into an examination (for example, a mobile phone/cellphone), you must give it to your coordinator/invigilator immediately.
- You must not include inappropriate, offensive or obscene content in your responses.
- All work submitted for assessment must be entirely your own. Collusion, plagiarism and the impersonation of another candidate are not permitted.

Failure to comply with any of these regulations will be considered academic misconduct and may result in no grade being awarded.

Archbishop MacDonald High School
IB Diploma Programme May 2023
Exam Zone C UTC 7 Schedule

Examinations cannot be rescheduled without authorization from the Assessment Division, IB Global Center, Cardiff.
Exam start times are mandated by IBO, please be in the exam room 10 minutes prior to the start of your exam.

Date		Start Time	Exam	Room
Tuesday, May 2, 2023 Day 2	AM	9:00-10:00 10:10-11:25	Physics HL Paper 1 (1h)[1] Physics HL Paper 3 (1h 15m)[2]	205
Wednesday, May 3, 2023 Day 1	AM	9:00-11:15	Physics HL Paper 2 (2h 15m)[3]	205
	PM	12:30-2:45	English A Literature HL Paper 1 (2h 15m)	205
Thursday, May 4, 2023 Day 2	PM	1:00-2:45	English A Literature HL Paper 2 (1h 45m)	205
Monday, May 8, 2023 Day 2	PM	1:00-2:30	Mathematics: analysis & approaches SL Paper 1 (1h 30m)[4]	205
Tuesday, May 9, 2023 Day 1	PM	12:00-1:30	Mathematics SL Paper 2 (1h 30m)[5]	205
Wednesday, May 10, 2023 Day 2	PM	12:30-1:30 1:40-3:10	History HL Paper 1 (1h) History HL Paper 2 (1h 30m)	205
Thursday, May 11, 2023 Day 1	AM	9:00-11:30	History HL Paper 3 (2h 30m)	205
	PM	12:30-1:15 1:25-2:25	Chemistry SL Paper 1 (45m) Chemistry SL Paper 3 (1h)[6]	205
Friday, May 12, 2023 Day 2	AM	9:00-10:00	French B HL Paper 2 – Listening Comprehension (1h)[7]	122
	AM	9:00-9:45	French B SL Paper 2 – Listening Comprehension (45m)[8]	122
	PM	12:30-1:45	Chemistry SL Paper 2 (1h 15m)[9]	205
Monday, May 15, 2023 Day 1	AM	9:00-10:30 10:40-11:40	French B HL Paper 1 (1h 30m) French B HL Paper 2 – Reading Comprehension (1h)	205
	AM	9:00-10:15 10:25-11:25	French B SL Paper 1 (1h 15m) French B SL Paper 2 – Reading Comprehension (1h)	205
Tuesday, May 16, 2023 Day 2	AM	9:00-10:00 10:10-11:10	Spanish ab initio Paper 1 (1h) Spanish ab initio Paper 2 – Reading Comprehension (1h)	205
Wednesday, May 17, 2023 Day 1	AM	9:00-9:45	Spanish ab initio Paper 2 – Listening Comprehension (45m)[10]	122
	PM	12:30-1:30 1:40-2:55	Biology HL Paper 1 (1h) Biology HL Paper 3 (1h 15m)[11]	205
Thursday, May 18, 2023 Day 2	AM	9:00-11:15	Biology HL Paper 2 (2h 15m)[12]	205

[1] Physics data booklet provided
[2] Bring calculator, physics data booklet provided
[3] Bring calculator, physics data booklet provided
[4] Formula booklet provided
[5] Formula booklet provided, bring graphic display calculator
[6] Bring calculator, chemistry data booklet provided
[7] Bring headphones
[8] Bring headphones
[9] Bring calculator, chemistry data booklet provided
[10] Bring headphones
[11] Bring calculator
[12] Bring calculator

Exam Rules and Considerations:

- Plan to arrive to the exam room 10 minutes early.
- Students will need a pen with dark blue or black ink, a soft pencil that produces dark lines (and a sharpener if required), a ruler, an eraser, basic geometry instruments (i.e. protractor)
- Please ensure you review the regulations involving calculators during the pre-exam period.
- Correction fluid/pens are not permitted.
- No watches or wearable technology (including wireless headphones, smart glasses, etc.)
- Drinking water in a clear container is permitted. No other food or drink is permitted.
- Bring your student ID.
- Know your candidate number and session number.
- Students are *not* allowed to leave the exam room.
- Go to the washroom *prior* to your exam!
- Adhere to the seating plan assigned for each exam.
- Once you enter the exam room there is absolutely NO talking.
- When two examinations for the same subject are scheduled in the same slot, the examinations will be administered one after the other from the published start time.
- At the discretion of the programme coordinator, a short, supervised break may be permitted between the examinations. During supervision, candidates must have no access to cell/mobile telephones, the internet or any digital devices that would enable communication with external IB candidates or any other person.
- At the discretion of the school, candidates should be in good standing at the time of the examinations.
- Full IB Candidates will be exempt from classes from the start of their first exam to the end of their last exam.
- IB Course Candidates will only be exempt from their classes during their exam writing times.

The Day Before the Exam:

Get organized & minor review
Get a good night's sleep

The Day of the Exam:

Have something to eat
Review your notes
Get outside or exercise to clear your mind
Plan to arrive early

At the Start of the Exam:

Breathe.
Smile – give yourself positive energy.
Remind yourself of everything you DO know - you can do this!

During the Exam:

Read the questions carefully
Annotate your exam copy
Organize your thoughts before you write
Read and revise your writing/answers as you go
Keep moving forward, even if you don't understand a question
Flag questions for later to revisit
Go with your gut

After the Exam:

Smile!

Diploma Programme

Career-related Programme

Conduct of the examinations

Notice to candidates

The following instructions must be observed for all IB examinations. Failure to comply may result in no grade being awarded for the subject being examined.

If you do not understand these instructions, please contact your coordinator.

Arrive on time for your examination. You are not permitted to leave the examination within the first 60 minutes, or the last 15 minutes.

Do not communicate with other candidates in the examination room.

Do not bring any unauthorized materials to your desk.

Follow all invigilator instructions. Raise your hand if you require the invigilator's attention.

Do not take any examination material out of the examination room.

Ensure that you report any incidents of possible academic misconduct to your coordinator.

Do not discuss the content of the examination with any person outside of your school in the next 24 hours.

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Diploma Programme

Career-related Programme

Conduct of the examinations

Items not permitted

If you take any of the following items into an IB examination - *even by mistake* - you will be in breach of regulations and may not be eligible for a grade in the subject being examined.

If you do not understand these instructions, please contact your coordinator.

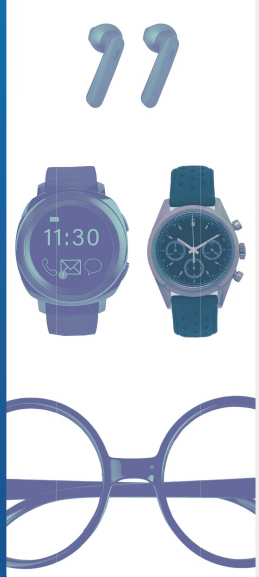
Electronic equipment

Note that this includes, but is not limited to, mobile phones/cellphones and any device that allows communication.

An approved calculator is permitted in certain examinations.

Books or guides

Rough/scratch paper or notes



Wearable technology and all types of watches

Note that this includes, but is not limited to, smart watches, smart glasses, and wireless headphones.

Refreshments

Water is permitted at the discretion of the coordinator.

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Diploma Programme

Career-related Programme

Conduct of the examinations

Language acquisition listening comprehension examinations

You will have five minutes' reading time to review the content of the examination. No writing is allowed during this time.

Once the five minutes' reading time has concluded, you may write answers and notes at any time during the examination.

You may write notes in the spaces provided. Notes will not be marked.

Pauses are built in between each audio text.

You are only permitted to use wireless headphones if they are supplied by your school.

If the audio is played on an individual device, you are not permitted to interact with the device once the examination has started.

Once three beeps are heard, the examination has concluded, and you must stop writing.

Further to the information provided here, please ensure that you read the full instructions on the front page of each examination. If you would like any further information, please speak to your coordinator.

The conduct of examinations rules apply to these examinations and must be observed at all times.

What is academic honesty?

International Baccalaureate (IB) programmes encourage students to inquire and to think critically and creatively, and to present their thinking in a variety of ways. They should be able to make their thoughts and their learning visible and explicit, show how they have constructed their ideas, and demonstrate the views they have followed or rejected. This is essentially what scholarship and academic honesty are: making knowledge, understanding and thinking transparent.

Students need to understand how knowledge is constructed and, consequently, their own role in furthering knowledge construction and building understanding. An essential aspect of this is an understanding of the technical aspects of academic honesty, of citing and referencing.

Academic honesty is an essential principle of the IB's academic programmes that enhances the organization's credibility and position as a leader in international education. As stated in the IB learner profile, all members of the IB community strive to be "principled", acting with "integrity and honesty, with a strong sense of fairness, justice and respect for the dignity of the individual, groups and communities".

For more information,
please view the IB learner profile at
http://www.ibo.org/en/benefits/learner-profile/
and the publication Academic honesty in the
IB educational context at
http://www.ibo.org/myib/digitaltoolkit/brochuresflyersposters/

As the legal guardian of a Diploma Programme student, how can we support our children?

- Encourage them to plan each assignment.
- Provide support with the scheduling of their work, as they may have many assignments to complete.
- Establish a good level of communication with the school so that you understand the requirements of the Diploma Programme and what is expected of students.
- Encourage them to ask their teacher for advice if they are having difficulty with their work.

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Diploma Programme

Academic Honesty in the Diploma Programme

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What is academic misconduct?

Academic misconduct is a behaviour that results in, or may result in, the student or any other student gaining an unfair advantage (or a behaviour that disadvantages other students) in one or more assessment components. Unfortunately in every Diploma Programme examination session there are students who are investigated for alleged "academic misconduct".

Categories of "academic misconduct" in the IB:

Plagiarism is defined as the representation, intentionally or unwittingly, of the ideas, words or work of another person without proper, clear and explicit acknowledgment. The use of translated materials, unless indicated and acknowledged, is also considered plagiarism.

Collusion is defined as supporting academic misconduct by another student, for example allowing one's work to be copied or submitted for assessment by another.

Misconduct during an IB examination includes taking unauthorized material into an examination room, disruptive behaviour and communicating with others during the examination.

Communication about the content of an examination 24 hours before or after the examination with others outside their school community is also considered a breach to IB regulations.

Duplication of work is defined as the presentation of the same work for different assessment components and/or Diploma Programme requirements.

Good practice—recommendations for students

- Make sure that information you have used is acknowledged in the body of the text and is fully listed in the bibliography using the referencing style agreed with your teacher.
- Cite your sources so that readers can find them; if you cannot state the origin of the source it is probably better not to use it.

The IB has no means of knowing whether an act of academic misconduct was deliberate or not. Students should know how to indicate and cite material that is not their own. Students are also expected to follow the rules of acceptable behaviour in the exam room and around the time of the examination.

For these reasons, a student's intent cannot be taken into account if the IB investigates an alleged breach of the *General regulations: Diploma Programme*.

Be aware that a breach of IB regulations will have serious consequences.

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Acknowledging the work of others

Proper citation is a key element to academic scholarship and intellectual exchange.

More guidance can be found in the IB publication Effective citing and referencing available in the Digitial toolkit section on the IB website (**http://www.ibo.org/myib/digitaltoolkit/brochuresflyersposters/**)

Essentials

- Make clear which words, ideas, images and works are not your own (including maps, charts, musical compositions, movies, computer source codes and any other material).
- Give credit for copied, adapted and paraphrased material.
- When using text, make clear where the borrowed material starts and finishes.
- All sources cited in the text must also be listed in the bibliography (or reference list/list of works cited) and all sources listed in the bibliography (or reference list/list of works cited) must be cited in the text.

Calculators guidance for examinations booklet 2023

Published September 2022

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Peterson House, Malthouse Avenue, Cardiff Gate
Cardiff, Wales CF23 8GL
United Kingdom
Website: ibo.org

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1.0 Introduction

This publication contains an overview of the use of calculators in IB examinations.

A graphic display calculator (GDC) is a calculator that is capable of displaying tabular, matrix, list, geometrical and graphical representations, in addition to having functions found on scientific calculators. GDCs can run programs and flash ROM applications (apps).

Not all programs or apps are suitable for use in examinations. Not all GDCs are suitable for use in examinations that require GDCs. The document *Use of calculators in examinations* is updated annually in February for the May and November sessions and may be found on the Programme Resource Centre, on the home pages of subjects that require calculators. This document contains a list of recommended and prohibited GDCs, along with required examination settings and approved apps. It is essential that invigilators have a copy of this document.

It is strongly recommended that candidates have access throughout the subject course(s) to a single GDC from the list of recommended models.

2.0 Groups and subjects

Calculators of the types indicated as suitable are allowed only in the subjects listed in the table below.

Subjects	Calculators
Business management Environmental systems and societies	A four-function (plus, minus, multiply, divide) calculator, scientific calculator or GDC is required for all examinations.
Economics	Calculators are **not** allowed for paper 1. For paper 2 and paper 3, while all questions requiring a calculator can be answered fully using a four-function calculator (plus, minus, multiply, divide), GDCs are allowed during the examination. The graphing functions on these calculators may assist students and it is therefore recommended that all students are familiar with the use of GDCs.
Astronomy Marine science Nature of science	A calculator with the following minimum functionalities is required for all examinations (a GDC is recommended). • Decimal logarithms • Values of xy and $x1/y$ • Value of π (pi) • Trigonometric functions • Inverse trigonometric functions • Natural logarithms • Values of e^x • Scientific notation
Biology Chemistry Physics Sports, exercise and health science	Calculators are **not** allowed for paper 1. On paper 2 and paper 3, a calculator with the following minimum functionalities is required (a GDC is recommended). • Decimal logarithms • Values of xy and $x1/y$ • Value of π (pi) • Trigonometric functions • Inverse trigonometric functions • Natural logarithms • Values of e^x • Scientific notation
Design technology	Calculators are **not** allowed for paper 1. A four-function calculator (plus, minus, multiply, divide), scientific calculator or GDC is required for SL/HL paper 2 and HL paper 3 examinations.

Subjects	Calculators
Mathematics: analysis and approaches Mathematics: applications and interpretation	Calculators are **not** allowed for *Mathematics: analysis and approaches* paper 1. On *Mathematics: analysis and approaches* paper 2 and paper 3 and *Mathematics: applications and interpretation* paper 1, paper 2 and paper 3, a GDC with the following minimum functionalities is required: • plot graphs with any viewing window and identify key features • solve equations, graphically and numerically (real and complex solutions) • solve systems of equations, graphically and numerically (real and complex solutions) • find a numerical derivative at a point • find a numerical definite integral • financial (TVM) solver • add and multiply matrices, find determinant and inverse matrices • convert between Cartesian and modulus-argument (polar) form • operations with complex numbers • probability distribution functionality: ◦ normal distribution ◦ binomial distribution ◦ Poisson distribution ◦ t-distribution ◦ confidence intervals (for normal and t-distributions) • find statistical values including: ◦ binomial coefficient ${}^{n}C_{r}$, ${}^{n}P_{r}$ ◦ 1 and 2 variable statistical values ◦ Pearson's product-moment correlation coefficient and coefficient of determination ◦ regression equations (linear, quadratic, cubic, exponential, power and sinusoidal) ◦ X^2 test for independence (X^2 values and p values) ◦ X^2 goodness of fit test (X^2 values and p values), varying the degree of freedom ◦ t-test (t values and p values) • spreadsheets or recursion tools to find approximate solutions using Euler's method • plot phase portraits for two numeric sequences

Different courses have different requirements, but the minimum requirements listed above are for all the mathematics courses. Some of these may not be relevant to every course. Statistical tables are not allowed in mathematics subject examinations. Candidates must have access to calculators that are able to find relevant statistical values.

3.0 General restrictions applying to all calculators used in examinations

Restrictions on the use of certain technology are in place to discourage malpractice and maintain fair and reasonable access to technology that is generally required in the good practice of teaching and assessment.

- Telephones, smart phones, smart watches, tablets, calculator watches, personal computers (PCs) and any other device that enables internet access are not allowed in any subject examinations.
- Only the manufacturer's operating system may be used.
- Computer algebra systems (CAS)-equipped calculators (symbolic manipulation, whether in-built or programmed) are not allowed in any subject examinations.
- Calculators with wireless/infrared communication are not allowed in any subject examinations.
- Examination questions must not be stored in, or recorded into, the memory of a calculator.
- Peripheral hardware must not be taken into the examination room (for example, keyboards, link cables and so on).
- Calculators must not be shared or exchanged during examinations.
- Calculator manuals must not be taken into the examination room.
- More than one calculator per candidate may be brought into the examination room. However, a spare set of batteries is a preferable alternative to several calculators.

4.0 Responsibilities

4.1 Coordinators and invigilators

The coordinator must ensure that these requirements are understood and are being followed by all candidates, teachers and invigilators. Schools are responsible for monitoring the use of calculators by candidates on a continuous basis.

During the examination, if a coordinator/invigilator finds that a candidate has used unauthorized material or technology, the matter should be reported in the same way as any other breach of examination regulations. During any inspection, the coordinator should expect to show visiting IB representatives that this checking procedure is being followed.

4.2 Teachers and candidates

Teachers of all Diploma Programme (DP) subjects that permit or require the use of calculators in examinations should make candidates aware of both the requirements and restrictions of use before the relevant examinations take place. The potential consequences of breaches of these requirements by candidates would be similar to consequences of any other breaches of examination regulations.

Teachers are responsible for monitoring the use of calculators by candidates throughout the course by informal conversation and by spot-checking calculators. Methods of monitoring individual calculators include manually checking, transferring memory to a PC or using tools provided by the calculator manufacturer, such as TestGuard®.

Use of calculators in IB DP examinations 2023 – version 1.0

This document should be read in conjunction with the "Conduct of examinations booklet 2023" and the "Calculators guidance for examinations booklet 2023"; both are available on the Programme Resource Centre.

We provide **examples** of calculators which are permitted for use in IB examinations and those which are prohibited. This list will be updated as and when necessary. It should be noted that these are **not exhaustive** nor definitive lists and teachers should check other models are within policy.

A calculator will **not** be permitted for IB DP examinations if:

- it does not meet the minimum requirements for calculators for that subject;
- it includes functionality that is unique to the **prohibited calculators** listed in this document, most predominately CAS functions;
- it includes additional elements, for example third-party applications or candidate generated notes, which are not removed (via a reset) or blocked (via an examination mode).

Schools should ensure that all calculators used in examinations comply with the regulations.

Examples of permitted calculators

<table>
<tr><td rowspan="3">Texas Instruments</td><td>TI 84 Plus – all models</td><td colspan="2">TI-83 Plus</td></tr>
<tr><td colspan="2">TI-Nspire (non-CAS models)
• TI-Nspire CX II / CX II-T (OS version 5.4 or higher)
• TI-Nspire CX (OS version 4.5.5)</td><td rowspan="2">All TI-Nspire models must be updated to the latest Operating System (OS) as indicated.

All TI-Nspire models must be placed in "Press-to-Test" mode with the correct features blocked (see list below).</td></tr>
<tr><td colspan="2">TI-Nspire (selected CAS models)
with CAS mode disabled
• TI-Nspire CX II CAS (OS version 5.4 or higher)
• TI-Nspire CX II-T CAS (OS version 5.4 or higher)
• TI-Nspire CX II-C CAS (OS version 5.4 or higher)</td></tr>
<tr><td>NumWorks</td><td colspan="3">NumWorks calculator (OS version 18.1.0 or higher) with IB exam mode activated</td></tr>
<tr><td>Hewlett Packard</td><td colspan="3">HP Prime updated to the latest firmware in "Exam Mode", with the correct features blocked (see list below)</td></tr>
<tr><td rowspan="3">Casio</td><td colspan="3">FX-9860GII / FX-9860GII SD / FX-9860G AU PLUS updated to the latest operating system for IB examinations in "Examination Mode (for IB)"</td></tr>
<tr><td colspan="3">FX-9750GIII / FX-9860GIII / Graph 35+ EII updated to the latest operating system for IB examinations in "Examination Mode (for IB)"</td></tr>
<tr><td colspan="3">FX-CG50 / FX-CG50AU / FX-CG20 / Graph 90+E updated to the latest operating system for IB examinations in "Examination Mode (for IB)"</td></tr>
</table>

See "Necessary actions with permitted calculators" below for guidance on ensuring these devices meet requirements.

Prohibited calculators

The following models are not allowed in examinations under any circumstances.

<table>
<tr><td rowspan="3">Texas Instruments</td><td>TI Voyage 200 (all versions)</td><td>TI 89 (all versions)</td></tr>
<tr><td colspan="2">Older CAS models:
• TI-Nspire CX CAS
• TI-Nspire CAS</td></tr>
<tr><td colspan="2">TI-Nspire models that are not updated to the latest operating system</td></tr>
<tr><td>Hewlett Packard</td><td colspan="2">HP 38-95 (all versions)</td></tr>
<tr><td rowspan="3">Casio</td><td>Classpad (all versions) / FX CG500</td><td>Graph 100</td></tr>
<tr><td>FX 2.0 (all versions)</td><td>FX 9970 (all versions)</td></tr>
<tr><td colspan="2">Devices with an “Examination Mode” that are not updated to the latest operating system</td></tr>
</table>

Notes:

- Any devices with unrestricted/candidate accessible WiFi functionality are not permitted.
- Other calculators which have advantageous features that do not appear on any of the permitted models **and/or** have functionality that is exclusive to the prohibited calculators (and not blocked during the examination) are not allowed.
- Candidates may not use or store data/notes, programs or flash (ROM) applications (Apps) in their calculators that may assist them in an examination by removing the need to recall facts or formulae.

Necessary actions with permitted calculators

Casio

FX-CG50 / FX-CG20 / FX 9860GIII / FX 9750GIII / FX 9860GII / FX 9860GII SD / FX 9860G AU PLUS / Graph 35+ EII / Graph 90+E *(and some older iterations of these devices)*

Ensure, via the Casio website, that your device has the latest operating system.

https://edu.casio.com/download_service/download/ib/

The “Examination Mode (for IB)” functionality must be engaged immediately before the examination and continue for the duration of the examination. If done earlier, a candidate must not have access to the calculator between the time it is put into “Exam Mode” and the examination.

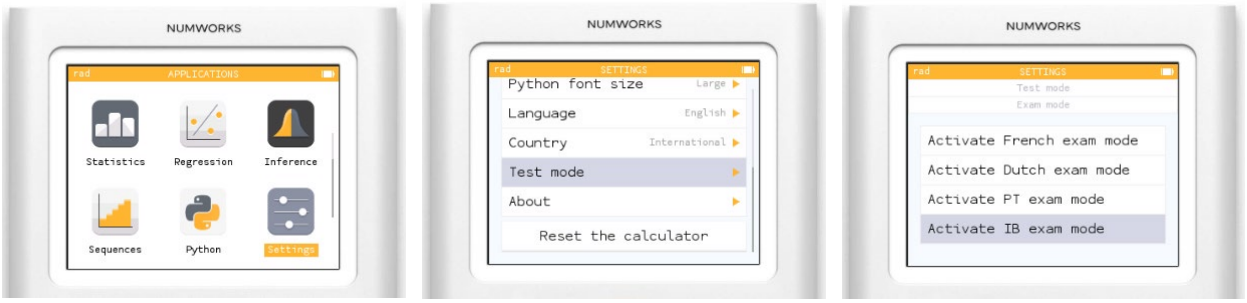
Please refer to the manual on how to engage this mode. If your device has multiple examination modes, ensure the “for IB” mode is implemented.

All recommended Casio calculators

Initialize/reset **all** memory.

NumWorks – IB exam mode

Navigate to the settings menu on the device and change the country to “International”. Returning to the settings menu, choose “Test mode”, then “Exam mode” and finally “Activate IB exam mode”.



The IB exam mode must be engaged immediately before the examination and continue for the duration of the examination. If done earlier, a candidate must not have access to the calculator between the time it is put into “IB exam mode” and the examination.

HP Prime “Exam Mode” configurations

Note: Candidates must upgrade their Prime to the latest firmware to use the “Exam Mode” properly. Primes which have not been updated and put into the correct “Exam Mode” are not allowed in the examinations. Primes must be put into “Exam Mode” immediately before the examination. If done earlier, a candidate must not have access to the calculator between the time it is put into “Exam Mode” and the examination. Further details about “Exam Mode” can be found on the HP website.

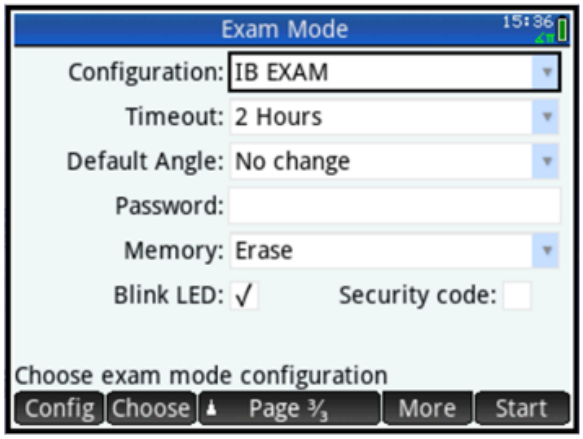
The following options in “Exam Mode” mode must be **ticked**.

- Erase memory:
- Blink LED:

The following options in “Exam Mode” mode must be **ticked** and therefore **blocked**.

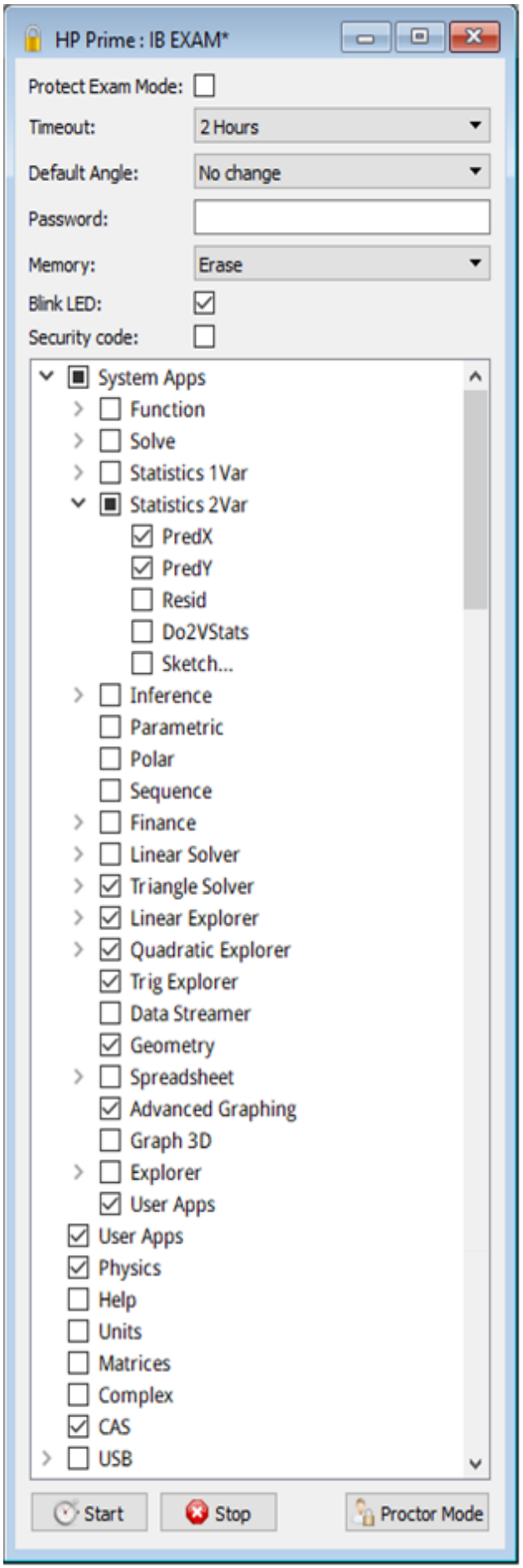
- PredX
- PredY
- Triangle Solver
- Linear Explorer
- Quadratic Explorer
- Trig Explorer
- Geometry
- Advanced Graphing
- User Apps
- Physics
- CAS
- Notes and Programs
- New Notes and Programs
- Vector
  - CROSS
  - DOT

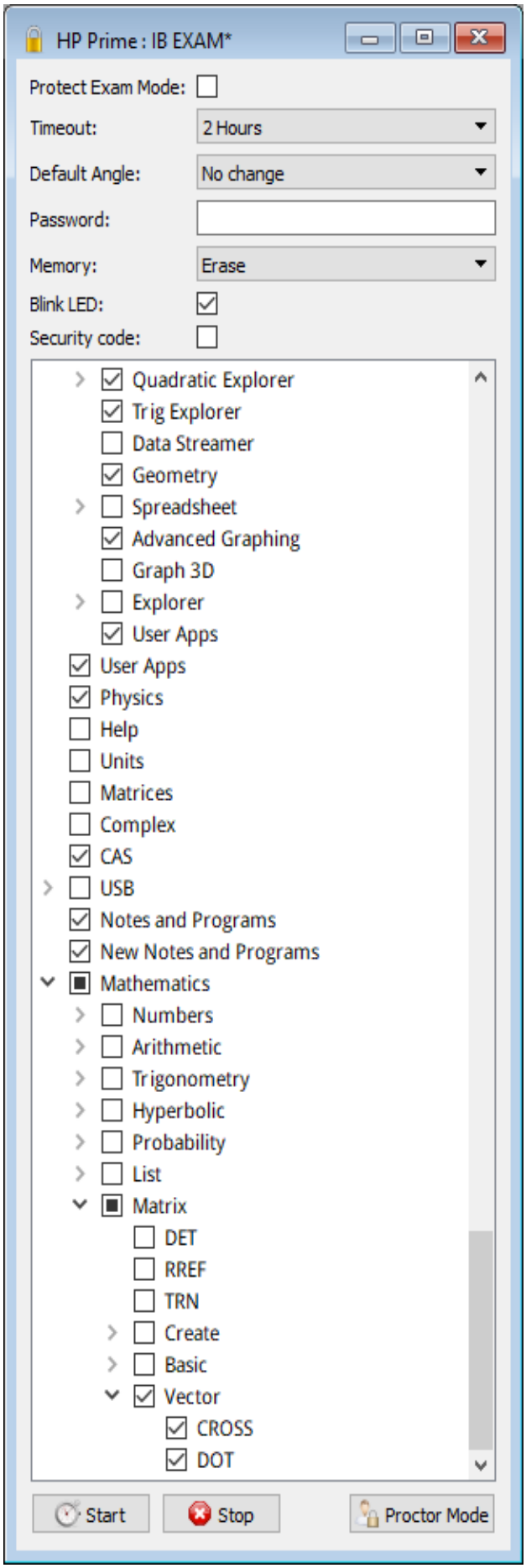
The following screen shots show how to put the Prime into the correct “Exam Mode”.



Notes:

- “Timeout” must be set for at least the duration of the examination.
- When put in “Exam Mode”, the default angle setting can be set to “Degrees” or “Radians” depending on candidate preference.


HP Prime : IB EXAM*
Protect Exam Mode:
Timeout:
2 Hours
Default Angle:
No change
Password:
Memory:
Erase
Blink LED:
Security code:
System Apps
Function
Solve
Statistics 1Var
Statistics 2Var
PredX
PredY
Resid
Do2VStats
Sketch...
Inference
Parametric
Polar
Sequence
Finance
Linear Solver
Triangle Solver
Linear Explorer
Quadratic Explorer
Trig Explorer
Data Streamer
Geometry
Spreadsheet
Advanced Graphing
Graph 3D
Explorer
User Apps
User Apps
Physics
Help
Units
Matrices
Complex
CAS
USB
Start
Stop
Proctor Mode


HP Prime : IB EXAM*
Protect Exam Mode:
Timeout:
2 Hours
Default Angle:
No change
Password:
Memory:
Erase
Blink LED:
Security code:
Quadratic Explorer
Trig Explorer
Data Streamer
Geometry
Spreadsheet
Advanced Graphing
Graph 3D
Explorer
User Apps
User Apps
Physics
Help
Units
Matrices
Complex
CAS
USB
Notes and Programs
New Notes and Programs
Mathematics
Numbers
Arithmetic
Trigonometry
Hyperbolic
Probability
List
Matrix
DET
RREF
TRN
Create
Basic
Vector
CROSS
DOT
Start
Stop
Proctor Mode

TI Nspire / TI Nspire CX / TI Nspire CX II "Press to Test" configurations

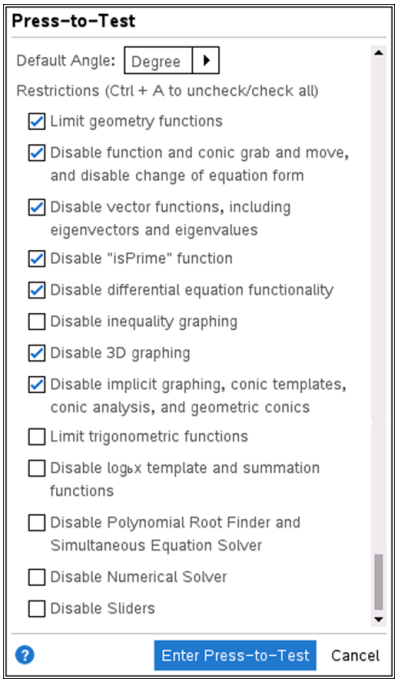
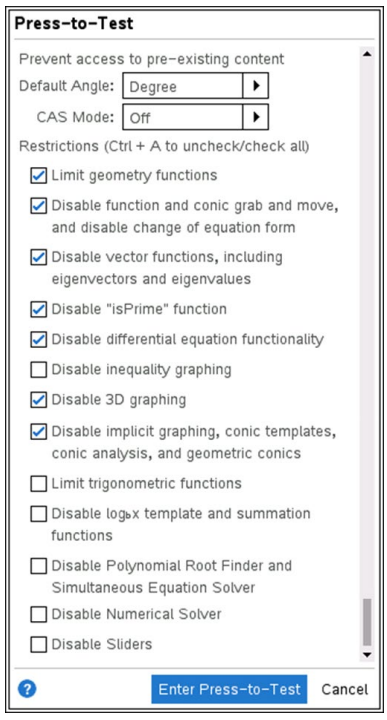
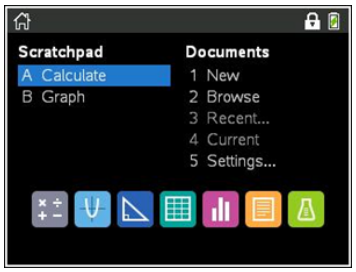
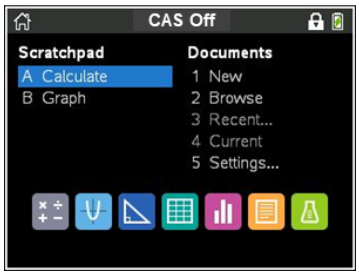
Note: Nspires which have not been put into the correct "Press to Test" mode are not allowed in the examinations. Nspires must be put into "Press to Test" mode immediately before the examination. If done earlier, a candidate must not have access to the calculator between the time it is put into "Press to Test" mode and the examination. Further details about "Press to Test" can be found on the TI website.

The following options in "Press to Test" mode must be **ticked** and therefore **blocked**.

- Limit geometry functions
- Disable function and conic grab and move, and disable change of equation form
- Disable vector functions, including eigenvectors and eigenvalues
- Disable "isPrime" function
- Disable differential equation functionality
- Disable 3D graphing
- Disable implicit graphing, conic templates, conic analysis, and geometric conics

The following options in "Press to Test" mode must be **unticked** and therefore **allowed**.

- Disable inequality graphing
- Limit trigonometric functions
- Disable $\log_b x$ template and summation functions
- Disable Polynomial Root Finder and Simultaneous Equation Solver
- Disable Numerical Solver
- Disable Sliders

TI-Nspire (non-CAS models) • **TI-Nspire CX II** • **TI-Nspire CX II-T** • **TI-Nspire CX** • **TI-Nspire**	TI-Npire (selected CAS models) <u>with CAS Mode off</u> • **TI-Nspire CX II CAS** • **TI-Nspire CX II-T CAS** • **TI-Nspire CX II-C CAS**	**When complete, Home screens must appear as follows**
		TI-Nspire (non-CAS models)  TI-Nspire (selected CAS models)  Screens will vary depending on the selected model

Note: For some devices, an "Exact Arithmetic" mode can be turned on at this stage. This is permitted in IB examinations, although it is not required. For IB GDC examinations the exact value or a 3 significant figure approximation will be credited as correct. Unlike the "Angle Setting", this "Exact Arithmetic" mode cannot be changed once set.

TI 83 plus / TI 84 plus permitted calculators

1. Reset all RAM memory.

2. Reset Archive Vars (if applicable).

3. Remove all Flash (ROM) applications (Apps) except those listed below, where applicable.

App Menu Name	Description
CBL/CBR	Connectivity/set-up of CBL™ data collection system (Other connectivity Apps for USB-type probes are also acceptable and do not need to be removed.)
Chinese	Chinese version of Catalog Help
CtlgHelp	Catalog Help provides easy access to calculator function information
Dansk	Danish language localizer—this App will translate all prompts, error messages and most functions into Danish
Deutsch	Language localizer—this App will translate all prompts, error messages and most functions into German
EasyData	Connectivity App for USB-type data collection probes
Español	Language localizer—this App will translate all prompts, error messages and most functions into Spanish
Finance	Finance operations—part of the Operating System
Français	Language localizer—this App will translate all prompts, error messages and most functions into French
Italiano	Language localizer—this App will translate all prompts, error messages and most functions into Italian
Magyar	Language localizer—this App will translate all prompts, error messages and most functions into Hungarian
Nederlan	Language localizer—this App will translate all prompts, error messages and most functions into Dutch
Norsk	Language localizer—this App will translate all prompts, error messages and most functions into Norwegian
Polski	Language localizer—this App will translate all prompts, error messages and most functions into Polish
PolySmlt	Combination of two programs, one that finds polynomial roots and one that finds solutions to systems of equations. This version is an older version than PolySmlt2.
PlySmlt2	Combination of two programs, one that finds polynomial roots and one that finds solutions to systems of equations
Portug	Language localizer—this App will translate all prompts, error messages and most functions into Portuguese
Suomi	Language localizer—this App will translate all prompts, error messages and most functions into Finnish
Svenska	Language localizer—this App will translate all prompts, error messages and most functions into Swedish
Transfrm	Transform Graphing—this App allows users to increment a parameter in a function whilst viewing the function; analogous to the sliders in the TI-Nspire models.

Conditions of use of GDCs in examinations from 2008 onwards

Graphic display calculator (GDC) models recommended for all subjects that allow calculators to be used

Texas Instruments TI-83 Plus/TI-83 Plus Silver Edition/TI-84 Plus/TI-84 Plus Silver Edition

Casio CFX-9850 GC Plus/FX-9750 G Plus/CFX-9950 Plus/FX1.0 Plus/FX-9860 G/FX-9860 AU/FX-9860 G SD/Graph 35 Plus/Graph 65 Plus/Graph 85/Graph 85 SD

(See the *Handbook of procedures for the Diploma Programme (Vade Mecum)* for a full list of recommended GDC models.)

International Baccalaureate®

Texas instruments

TI-83 Plus/TI-83 Plus Silver Edition
TI-84 Plus/TI-84 Plus Silver Edition

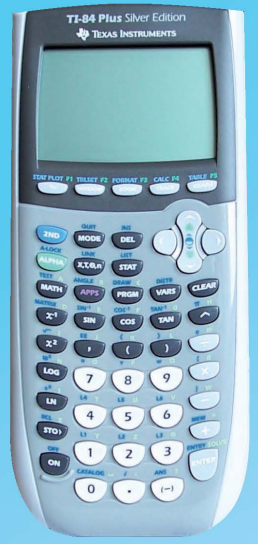
Conditions of use in examinations

1. The RAM memory must be reset or initialized on all calculators. (See **Table 1** for instructions on how to achieve this.)
2. The ROM memory must be reset, initialized or modified so that only approved flash Apps remain in the calculator memory. (See **Table 2** for instructions on how to achieve this; see **Table 3** for a full list of approved flash Apps.)

How to reset the RAM memory of the TI-83/84 family of models

Table 1

Press	Result
2nd then + to access memory functions.	MEMORY 1:About 2:Mem Mgmt/Del… 3:Clear Entries 4:ClrAllLists 5:Archive 6:UnArchive 7↓Reset…
7 to access reset function.	RESET ARCHIVE ALL 1:All RAM… 2:Defaults…
1 to reset all RAM memory.	RESET RAM 1:No 2:Reset Resetting RAM erases all data and programs from RAM.
2 to confirm RAM reset.	TI-84 Plus Silver Edition 2.21 RAM cleared
2nd + 2 7 will display full RAM and no files. RAM FREE 24250 TI-84+SE RAM FREE 24289 TI-83+SE RAM FREE 24303 TI-83+	RAM FREE 24250 ARC FREE 138274
PRGM will display the screen with no programs listed.	EXEC EDIT NEW



TI-82/TI-83/TI-85/TI-86 (models without ROM memory)

Conditions of use in examinations

1. The RAM memory must be completely reset. (See manufacturer's instructions on how to achieve this.)
2. The standard versions of the following RAM programs can be loaded after the RAM memory is reset.
   - Polynomial root finder
   - Simultaneous equation solver
   - Equation solver

Standard versions of RAM programs for most of these models can be found at www.ticalc.org.

How to remove flash Apps from the ROM memory of the TI-83 Plus/TI-83 Plus Silver Edition/TI-84 Plus/TI-84 Plus Silver Edition

Table 2

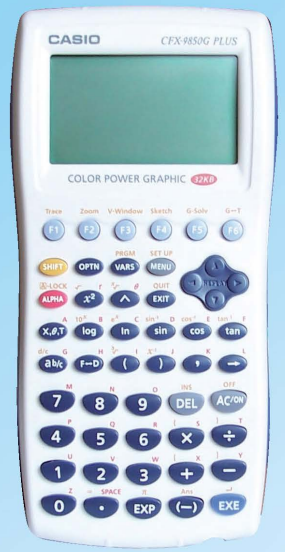
Press	Result
2nd then + to access memory functions.	MEMORY 1:About 2:Mem Mgmt/Del… 3:Clear Entries 4:ClrAllLists 5:Archive 6:UnArchive 7↓Reset…
2 to access memory management functions.	RAM FREE 22460 ARC FREE 138274 1:All… 2:Real… 3:Complex… 4:List… 5:Matrix… 6↓Y-Vars…
ALPHA then MATH to view Apps in calculator memory. (The Apps displayed on this screen may be different to those found on your calculator.)	RAM FREE 22460 ARC FREE 138274 ▸*ALGICHS 32768 *ALGIPRTi 65536 *AreaForm 16384 *CBL/CBR 16384 *CSheetDe 49152 *CSheetEs 49152
◂ and ▸ to scroll up and down to select the Apps to be removed. Arrow indicates selection; on this screen, the Apps CabriJr has been selected.	RAM FREE 22460 ARC FREE 220194 *CSheetDe 49152 *CSheetEs 49152 *CSheetFr 49152 ▸*CabriJr 65536 *CelSheet 49152 *Conics 32768
DEL to delete the Apps selected. A confirmation screen will appear.	Are You Sure? 1:No 2:Yes
2 to confirm delete. Updated display of Apps in memory will appear after a short pause. The Apps deleted will no longer appear. Repeat until only approved Apps remain.	RAM FREE 22460 ARC FREE 285730 *CSheetDe 49152 *CSheetEs 49152 *CSheetFr 49152 ▸*CelSheet 49152 *Conics 32768 *CtlgHelp 32768
APPS to check Apps available on calculator.	APPLICATIONS 1:Finance… 2:CBL/CBR 3:CSheetDe 4:CSheetEs 5:CSheetFr 6:CelSheet 7↓Conics
(Note that Finance will not appear in the memory screens, but will only appear when APPS is pressed.)	

List of approved flash Apps

Table 3

Screen name	Full program/Apps name and version
CBL/CBR	CBL™ v1.0, Texas Instruments
Chinese	Chinese Help v1.01, © Inventec, 1999
CtlgHelp	Catalog Help v1.0, © Texas Instruments, 2000
Dansk	Dansk Localizer v1.02, © Texas Instruments, 1999
Deutsch	Deutsch Localizer v1.02, © Texas Instruments, 1999
Español	Español Localizer v1.02, © Texas Instruments, 1999
Finance	Finance—part of TI operating system
Français	Français Localizer v1.02, © Texas Instruments, 1999
Italiano	Italiano Localizer v1.02, © Texas Instruments, 1999
Magyar	Magyar Localizer v1.02, © Texas Instruments, 1999
Nederlan	Nederlan Localizer v1.02, © Texas Instruments, 1999
Norsk	Norsk Localizer v1.02, © Texas Instruments, 1999
Polski	Polski Localizer v1.02, © Texas Instruments, 1999
PolySmlt	Polynomial Root Finder and Simultaneous Equation Solver v1.0, © Texas Instruments, 2001
PolySmlt 2	Polynomial Root Finder and Simultaneous Equation Solver v2.0, © Texas Instruments, 2006
Portug	Portug Localizer v1.02, © Texas Instruments, 1999
Suomi	Suomi Localizer v1.02, © Texas Instruments, 1999
Svenska	Svenska Localizer v1.02, © Texas Instruments, 1999

Casio



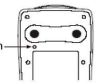
CFX-9850 GC Plus
FX-9750 G Plus
CFX-9950 Plus
FX1.0 Plus
FX-9860 G
FX-9860 AU
FX-9860 G SD
Graph 35 Plus
Graph 65 Plus
Graph 85
Graph 85 SD

Conditions of use in examinations

1. The RAM memory must be completely reset. (See **Table 4** for instructions on how to achieve this.)
2. The ROM memory must be initialized (FX1.0 Plus model only).

How to reset the RAM memory of the Casio CFX-9850 GC Plus/FX-9750 G Plus/CFX-9950 Plus/ FX1.0 Plus/FX-9860 G/FX-9860 AU/FX-9860 G SD/ Graph 35 Plus/Graph 65 Plus/Graph 85/ Graph 85 SD

Table 4

Press	Result
Locate the reset button on the back of the calculator.	
Use a thin, pointed object to press the reset button. The reset confirmation screen will appear.	******** * RESET * ******** RESET ALL MEMORIES? [F1] YES RESET ALL [F6] NO
F1	******** * * * MEMORY CLEARED! * * * ******** PRESS [MENU] KEY
If the display appears to be darker or dimmer after you reset the calculator, adjust the colour contrast. See the manufacturer's manual for instructions for other models.	