2024–2025 Calculator Information and Rules for Mathematics and Science Diploma Exams

Introduction

This document contains information on the rules that apply to the use of calculators when mathematics and science diploma exams are administered and written. For an overview of the calculator policy, see the *Diploma Examinations Program General Information Bulletin*.

Permitted and prohibited calculator materials

Permitted Calculator Materials

Students may bring the following materials into the diploma exam writing room, for their exclusive use, when writing diploma exams:

- an approved graphing calculator that is appropriately cleared and configured,

  or

  a scientific calculator that is appropriately configured and does not have prohibited properties
- extra batteries

Prohibited Calculator Materials and Properties for Scientific and Graphing Calculators

The following calculator properties and materials are **not** permitted during the writing of diploma exams:

- programmed memory content
- symbolic manipulation capabilities (e.g., simplifying or factoring polynomial expressions)
- ability to provide trigonometric calculation exact values
- ability to simplify radicals and rationalize denominators
- wireless communication capabilities
- built-in notes, libraries, or formulae (e.g., definitions or explanations in alpha notation)
- downloaded programs
- external (peripheral) devices and other support materials such as manuals, printed or electronic cards, printers, memory expansion chips or cards, external keyboards
- calculator cases

List of approved graphing calculators

Alberta Education has approved the use of the following **graphing** calculators, **if they are properly cleared and configured**, during the writing of diploma exams. This list is updated annually.

Casio

- fx-9750 GII
- fx-9750 GIII (**must** be in examination mode)
- fx-9750 G Plus (no longer manufactured)
- fx-9860 GIIs (no longer manufactured)

Sharp (no longer manufactured or sold in Canada)

- EL-9600
- EL-9600C
- EL-9900

Texas Instruments

- TI-83 Plus
- TI-84 Plus
- TI-84 Plus CE Python
- TI-84 Plus Pocket SE (no longer sold in Canada)
- TI-Nspire CX II
- TI-Nspire CX II CAS (CAS **must** be disabled)

The following Texas Instruments calculator models are approved, but are no longer manufactured.

- TI-83
- TI-83 Plus Silver
- TI-84 Plus Silver
- TI-84 Plus C Silver Edition
- TI-Nspire (with Touchpad or Clickpad)
- TI-Nspire CX Handheld
- TI-84 Plus CE

Scientific calculators

The following scientific calculators are **not** permitted during the writing of diploma exams due to their prohibited properties. This is **not** an exhaustive list as all scientific calculators must be checked and approved.

- Casio fx-115 ES Plus (or ES Plus 2)
- Casio fx-CG10 or fx-CG50

*NEW
- Casio fx-991 ES Plus (or ES Plus C or ES Plus 2 or EX or CW)
- Casio fx-300 ES (or ES Plus or ES Plus 2)
- Casio fx-82 ES Plus
- Casio fx-85 ES Plus
- Casio fx-95 ES Plus
- Casio fx-350 ES Plus
- Sharp EL W516X Writeview
- Sharp EL W535X Writeview
- TI 36X Pro
- TI 30XS Multiview

When checking scientific calculators for prohibited properties, it is advisable to check both trigonometric and radical values. For example, the calculations $\sqrt{12}$ and cos(30°) should result in decimal values and not exact values. With these calculations, the button that converts fractions to decimals, and vice versa, should also be tested.

Alberta

Rules

The following rules apply to the use of calculators when diploma exams are administered and written.

Principals

1. Principals shall ensure that, at the beginning of any mathematics or science diploma exam course, teachers and students are advised of the types of calculators that are currently approved for use during the writing of a diploma exam.

2. Prior to each diploma exam administration, the principal of a school or designated writing centre shall

    2.1. establish appropriate procedures to ensure that only approved calculators are brought into the diploma exam writing room

    2.2. communicate to students and teachers the rules related to the use of approved calculators during diploma exams

    2.3. develop procedures for teachers to properly clear and configure approved calculators to safeguard test security, validity, and fairness to all students

Diploma exam supervisors

1. Exam supervisors who supervise diploma exam administrations shall implement procedures to ensure that

    1.1. only approved calculators are brought into the diploma exam writing room

    1.2. approved calculators have been appropriately cleared and configured by diploma exam supervisors **before** and **after** the officially scheduled diploma exam administration

2. Prior to the commencement of the diploma exam administration, diploma exam supervisors shall review with students the diploma exam calculator use rules and procedures, and students' responsibilities for implementing them

Students

1. Students who write mathematics and science diploma exams shall

    1.1. understand all diploma exam calculator use rules and procedures, and their responsibilities for implementing them

    1.2. bring only **one** approved and appropriately configured calculator to the diploma exam writing room **for their exclusive use**

    1.3. ensure that their calculator has been appropriately cleared and configured by the diploma exam supervisor **before** and **after** writing the diploma exam

Calculator clearing, configuring, and checking procedures

The instructions required to clear the memories of approved graphing calculators and appropriately configure them are presented in the following tables. The factory-set memory values for certain approved graphing calculators are also presented in the tables.

For Casio models, the calculator's memory value should be checked after clearing to ensure that it reflects its factory settings. If the memory values do not reflect the factory settings, then the operating system version should also be checked.

For Texas Instruments models, the calculator's remaining memory after clearing and resetting is dependent on the calculator's operating system. Because this calculator manufacturer uses various operating systems for the same calculator model, their memory values upon reset may vary slightly from those shown in the table. If, after clearing, the memory value in a calculator is not reasonably close to the value presented in the table, then the calculator should be turned off and reset a second time. If the value fails to change, the calculator should not be used during the writing of the diploma exam.

If calculators are not properly cleared and configured **after** the writing of the diploma exam, all data input during the exam will be retained in the calculator.

Keystrokes to clear, configure, and check approved graphing calculators

CASIO

Calculator Model	Keystrokes	Information Regarding Cleared and Configured Calculator
fx-9750 GII	Select **Menu** Cursor to **SYSTEM** **EXE** **F5:** Reset **F2:** Main Memories **F1:** Yes "Reset main memories" **EXIT**	Select **Menu** Cursor to **MEM** **EXE** **Calculator will display:** 61904 Bytes Free
fx-9750 G Plus	Select **Menu** Cursor to **MEM** EXE **Reset** **EXE** **F1:** Yes-Reset	Select **Menu** Cursor to **MEM** **EXE** **Calculator will display:** 28628 Bytes Free
fx-9860 GIIs	Select **Menu** Cursor to **SYSTEM** **EXE** **F5:** Reset **F6:** Next Page **F1:** Main & Storage **F1:** Yes "Reset main memories, storage memories" **EXIT**	Select **Menu** Cursor to **MEM** **EXE** F1: **Main Memory** **Calculator will display:** 61904 Bytes Free

Note: The fifth and sixth digits of the OS version **cannot** be 20 for the fx-9750 GII or fx-9860 GIIs models; i.e., operating system version 2.0X.020X is **prohibited** on these models.

To prepare the CASIO fx-9750 GIII calculator for diploma exam writing purposes, Examination Mode **must be used**. Examination Mode disables specific calculation functions, programs, and applications, and allows them to be restored after the diploma exam.

CASIO

Calculator Model	Keystrokes	Information Regarding Cleared and Configured Calculator
fx-9750 GIII (OS 03.21.3200 or higher)	With the calculator off, hold down the [COS] and [7] keys and press the [AC/ON] key until the Examination Mode dialogue is displayed. Press [F1] (Yes) Press [F2] (Continue?) Press [EXIT] The icon [R] will flash on the screen display.	Disables Math Input/Output mode setting and various other modes and functions such as e-ACT mode, MEMORY mode, PRGM mode, etc. **Calculator will display:** 61860 Bytes Free Remaining memory may vary depending on the OS

Note: For the CASIO fx-9750 GIII model

- Resetting the memory is not sufficient as it fails to disable prohibited features.
- Check that the calculator is in Examination Mode by watching for the flashing [R] icon on the top right of the screen display.
- A flashing [T] icon on the top right of the screen display indicates that the calculator is not in the correct Examination Mode. This mode allows the student to access prohibited properties and is not allowed for diploma exams. The calculator will need to be reconfigured by the exam supervisor in the appropriate Examination Mode, using the directions in the table above.
- Pressing [ALPHA], [(-)] will show the elapsed time in Examination Mode. Ensure that remaining time is sufficient for the examination period.
- The calculator will remain in Examination Mode for 12 hours; turning the calculator on after 12 hours will cause the calculator to exit Examination Mode automatically.
- Delete main memory data before the student leaves the examination room.
    Select **Menu**
    Cursor to **SYSTEM**
    EXE
    F5: Reset
    F2: Main Memory
    F1: Yes
    EXIT
- If the RESTART button is pressed or the batteries replaced before 12 hours have elapsed, any data input is erased and the calculator will re-enter Examination Mode when the calculator is turned on.

SHARP

Calculator Model	Keystrokes			Information Regarding Cleared and Configured Calculator		
EL-9600 EL-9600C	**2ⁿᵈ**	**XΘTN** **Log** **2** **CL**	(Option) (Reset) (All Memory) (Clear all data)	**2ⁿᵈ** ⌄	**XΘTN**	(Option) **Calculator will display:** 18562 Bytes Free
EL-9900	**2ⁿᵈ**	**+ −** **× ÷** **Ln** **2** **CL**	(Option) (Reset) (All Memory) (Clear all data)	**2ⁿᵈ** ⌄	**+ −** **× ÷**	(Option) **Calculator will display:** 47447 Bytes Free

Texas Instruments

To prepare Texas Instruments calculators for diploma exam writing purposes, we recommend referring to the step-by-step instructions for using TestGuard, Press-to-Test, or memory reset available at https://education.ti.com/en/resources/calculator-set-up. If this link is unavailable or you have questions, please contact 1-800-TI-CARES, ti-cares@ti.com, or your local Texas Instruments representative.

Teachers should ensure that students are using the latest version of the calculator operating system.

Students and teachers are encouraged to access the free updates to the OS as needed on the TI website at http://education.ti.com. Mode settings may be altered when calculator memories are cleared. Students should check the mode settings on their calculators before proceeding to write their diploma exam.


To prepare Texas Instruments Nspire calculators (all approved Nspire models) for diploma exam writing purposes, the Press-to-Test feature must be used. Press-to-Test disables specific programs and apps and allows them to be restored after the diploma exam.

Note: When using the Press-to-Test feature, be sure to exit Press-to-Test so that all data and documents are cleared from the calculator after the diploma exam administration. Failure to exit Press-to-Test will allow all calculations and graphs to remain in the scratchpad.

To use the **Transfer Press-to-Test** feature on TI-Nspire (recommended):

1. Teacher sets up one TI-Nspire unit in Press-to-Test. See the table on the next page for directions on how to enter Press-to-Test or click the link above for more details on the initial setup. Ensure that the "Disable log template and summation functions" line is **unchecked** and all other lines are checked. For TI-Nspire CAS units, ensure that the CAS mode is also set to "Off". This should be done for all Mathematics and Science diploma exams.

2. When the unit reboots, there is an option to "Transfer Press-to-Test" on the Press-to-Test Page.

3. Using the unit-to-unit cable, connect the unit that has been configured to a student handheld unit and select the transfer option.

4. You can then unplug and move on to the next student. It is not necessary to wait until the student calculator completes processing. Using this method, each calculator will be configured to the Press-to-Test format determined by the teacher.

TEXAS INSTRUMENTS

Calculator Model	Keystrokes	Information Regarding Cleared and Configured Calculator
TI-Nspire (with Clickpad) (OS 3.9) **TI-Nspire (with Touchpad)** (OS 3.9)	With handheld off, hold down the [esc] and [⌂ on] keys simultaneously until the Press-to-Test screen is displayed. Uncheck only the line "Disable $\log_b x$ template and summation functions" for all diploma exams. Select "Enter Press-to-Test". The handheld will reboot and confirm restrictions. Select "OK". The LED light will blink **amber**, and a 'lock' icon will appear beside the battery icon.	Remaining memory may vary depending on the documents that are locked on the unit. These documents are inaccessible while in Press-to-Test.
TI-Nspire CX (OS 4.5.4 or higher) **TI-Nspire CX II** (OS 5.4.0 or higher) **TI-Nspire CX II CAS*** (OS 5.4.0 or higher)	With handheld off, hold down the [esc] and [⌂ on] keys simultaneously until the Press-to-Test screen is displayed. Ensure "Disable $\log_b x$ template and summation functions" and "Disable Numeric Solver" remain unchecked (default). * Set CAS Mode to "Off". Select "Enter Press-to-Test". The handheld will reboot and confirm restrictions. Select "OK". The LED light will blink **amber**, and a 'lock' icon will appear beside the battery icon. * "CAS OFF" will appear at the top of the Home screen.	Remaining memory may vary depending on the documents that are locked on the unit. These documents are inaccessible while in Press-to-Test.

Additional notes for clearing these calculator models are on the next page.

Notes: For TI-Nspire models

- Resetting the memory on TI-Nspire models is not sufficient as it fails to disable prohibited features.
- Check that the calculator is in the correct Press-to-Test mode by watching for the flashing amber light on the top of the handheld unit.
- The presence of an amber light does not ensure that the calculator has been correctly set unless the calculator clearing instructions have been followed or transfer Press-to-Test has been performed; i.e., an amber light indicates that a function has been disabled, but not which function.
- A flashing green light indicates that the calculator is in Press-to-Test mode, but no features have been disabled.
- To **exit** Press-to-Test mode, the calculator must be connected to another TI-Nspire using the unit-to-unit cable. Use the following keystrokes:

  From the Home screen, press [📠] and then [doc ▾]

  Select 9 (Press-to-Test)

  Select 1 (Exit Press-to-Test)
- There is no flashing light once the calculator is out of Press-to-Test mode.

To prepare Texas Instruments calculators (TI-83 or TI-84 models) for diploma exam writing purposes, the APPS program Test Guard or the Press-to-Test feature can be used as indicated:

- Test Guard 4.3 for TI-83 Plus models (will clear calculator) and TI-84 Plus models (will disable or clear with setup)
- Press-to-Test for TI-84 Plus models (with OS 2.55 or higher)

  To **enter** Press-to-Test, use the following keystrokes:

  With the calculator Off, simultaneously press the left arrow, right arrow, and On keys

  Select NO disable logBASE

  Select NO disable Σ(

  Ensure disable NUMERIC SOLVER remains NO

  Press ZOOM (OK)

  To **exit** Press-to-Test, the calculator must be connected to another TI-84 Plus model using the unit-to-unit cable. Use the following keystrokes:

  On the calculator that is in Press-to-Test mode, press 2nd (link), press ▶ Receive, Enter

  On the calculator you have connected it to, press 2nd (link), select 4: List, press ENTER to Select L1, press ▶ Transmit, Enter

  On the calculator that is in Press-to-Test mode, press 2: Overwrite, Enter

For TI-83 and TI-84 models, calculator memory can also be completely reset instead using the steps outlined on the next page.

TEXAS INSTRUMENTS

Calculator Model	Keystrokes			Information Regarding Cleared and Configured Calculator
TI-83 (OS 1.19)	**2ⁿᵈ** **5** **1** **2**	**+**	(MEM) (Reset) (All Memory) (Reset)	**2ⁿᵈ** **+** (MEM) **1** **Calculator will display:** 61904 Bytes Free
TI-83 Plus (OS 1.19) **TI-83 Plus Silver** (OS 1.19) **TI-84 Plus** (OS 2.55) **TI-84 Plus Silver** (OS 2.55) **TI-84 Plus Pocket SE** (OS 2.55)	**2ⁿᵈ** **7** ▶▶ Enter **1** **2**	**+**	(MEM) (Reset) (All)** (All Memory) (Reset)	Remaining memory may vary depending on the model, operating system and age of the calculator. **2ⁿᵈ** **+** (MEM) **2** **Currently most operating systems will display:** RAM Free 24317
TI-84 Plus C Silver (OS 4.0)	**2ⁿᵈ** **7** ▶▶ Enter **1** **2**	**+**	(MEM) (Reset) (All)** (All Memory) (Reset)	Remaining memory may vary depending on the model, operating system and age of the calculator. **2ⁿᵈ** **+** (MEM) **2** **Currently most operating systems will display:** RAM Free 21840
TI-84 Plus CE **TI-84 Plus CE Python** (OS 5.7 or higher)	**2ⁿᵈ** **7** ▶▶ Enter **1** **2**	**+**	(MEM) (Reset) (All)** (All Memory) (Reset)	Remaining memory may vary depending on the model, operating system and age of the calculator. **2ⁿᵈ** **+** (MEM) **2** **Currently most operating systems will display:** RAM Free 152891

Note: For TI-83 and TI-84 models

**The ▶▶ step indicated in the table is very important. If it is not followed, the memory may not be properly cleared.

- The "Finance" application is the only app that remains after following the clearing instructions.
- If, after clearing the calculator, the screen is blank, the contrast needs to be reset. To do this, use the 2nd and then ▲ repeatedly.
- Press-to-Test or Test Guard can be used rather than the directions provided in the table for some of these calculators in order to preserve stored programs, applications, and other data if desired.

Note: A calculator program called "FAKE" has been identified which, when initiated, facilitates student attempts to fake a calculator Reset. When the FAKE program is running, screens may appear normal; however, calculator key presses do not respond in typical fashion. Pressing the "on" key will cause the FAKE program to break. Continue with the proper clearing or configuration procedures above. If you have questions, please contact 1-800-TI-CARES, ti-cares@ti.com, or your local Texas Instruments representative.