Calculator Policy

Calculators are allowed only for some or all parts of AP Exams in these subjects: Biology, Calculus (AB/BC), Chemistry, Environmental Science, Macroeconomics, Microeconomics, Physics 1, Physics 2, Physics C: Mechanics, Physics C: Electricity and Magnetism, Precalculus, and Statistics. Students may bring up to two permitted calculators to the exam.

Graphing calculators must be on the approved calculator list. (See pages 63–64.) Four-function calculators are basic calculators that have functions limited to addition, subtraction, multiplication, division, square roots, and percentage.

NEW The calculator policy for AP Precalculus, including a list of approved graphing calculators, is now included in this section.

Note: Calculators are **not allowed** for any other AP Exams, including Computer Science A* and Computer Science Principles*.

*Unless a student has an approved accommodation for use of a four-function calculator. (See page 105 for details.)

Biology

Type of Calculator	Exam Section I Multiple Choice	Exam Section II Free Response
■ Allowed: ◆ Four-function calculator (with square root) ◆ Scientific (nongraphing) calculator, but must **not** have unapproved features or capabilities (see the list of unapproved calculators and technology on page 61) ◆ Graphing calculator	Allowed	Allowed

Calculus AB/Calculus BC

Type of Calculator	Exam Section I Multiple Choice	Exam Section II Free Response
■ Graphing calculator required and expected to have built-in capability to: ◆ Plot the graph of a function within an arbitrary viewing window. ◆ Find the zeros of functions (solve equations numerically). ◆ Numerically calculate the value of the derivative of a function at a point. ◆ Numerically calculate the value of a definite integral. ◆ If these capabilities aren't built in, the student should enter appropriate programs into the calculator before the exam.	**Not** allowed for Part A Required* for Part B	Required* for Part A **Not** allowed for Part B
■ **Not** allowed: ◆ Nongraphing and other types of calculators are prohibited, even as a second calculator		

* "Required" indicates some questions can't be answered without a graphing calculator and **no** other calculator type is permitted.

Chemistry

Type of Calculator	Exam Section I Multiple Choice	Exam Section II Free Response
■ Allowed: ◆ Scientific (nongraphing) calculator (recommended), but must **not** have unapproved features or capabilities (see the list of unapproved calculators and technology on page 61) ◆ Graphing calculator ◆ Four-function calculator (not recommended)	Allowed	Allowed

Environmental Science

Type of Calculator	Exam Section I Multiple Choice	Exam Section II Free Response
■ Allowed: ◆ Four-function calculator (with square root) ◆ Scientific (nongraphing) calculator, but must **not** have unapproved features or capabilities (see the list of unapproved calculators and technology on page 61) ◆ Graphing calculator	Allowed	Allowed

Macroeconomics/Microeconomics

Type of Calculator	Exam Section I Multiple Choice	Exam Section II Free Response
■ Allowed: ◆ Four-function calculator ■ **Not** allowed: ◆ Calculators with storage capabilities, such as scientific or graphing calculators, are prohibited	Allowed	Allowed

Physics 1: Algebra-Based, Physics 2: Algebra-Based, Physics C: Electricity and Magnetism, Physics C: Mechanics

Type of Calculator	Exam Section I Multiple Choice	Exam Section II Free Response
■ Allowed: ◆ Four-function calculator ◆ Scientific (nongraphing) calculator, but must **not** have unapproved features or capabilities (see the list of unapproved calculators and technology on page 61) ◆ Graphing calculator	Allowed	Allowed

NEW Precalculus

Type of Calculator	Exam Section I Multiple Choice	Exam Section II Free Response
■ Graphing calculator required and expected to have built-in capability to: ◆ Perform calculations (e.g., exponents, roots, trigonometric values, logarithms). ◆ Graph functions and analyze graphs. ◆ Generate a table of values for a function. ◆ Find real zeros of functions. ◆ Find points of intersection of graphs of functions. ◆ Find minima/maxima of functions. ◆ Find numerical solutions to equations in 1 variable. ◆ Find regressions equations to model data (linear, quadratic, cubic, quartic, exponential, logarithmic, sinusoidal, and plotting residuals). ◆ Perform matrix operations (e.g., multiplication, finding inverses). ■ **Not** allowed: ◆ Nongraphing and other types of calculators are prohibited, even as a second calculator	**Not** allowed for Part A Required* for Part B	Required* for Part A **Not** allowed for Part B

* "Required" indicates some questions cannot be answered without a graphing calculator and **no** other calculator type is permitted.

Statistics

Type of Calculator	Exam Section I Multiple Choice	Exam Section II Free Response
■ Allowed: ◆ Graphing calculator with statistical capabilities expected.* ◆ Scientific (nongraphing) calculator if the calculator has the required statistics computational capabilities described in the AP Statistics Course and Exam Description. – Computational capabilities should include standard statistical univariate and bivariate summaries, through linear regression. – Required capabilities may be either built in or programmed into the calculator before the exam. ◆ Graphical capabilities should include common univariate and bivariate displays such as histograms, boxplots, and scatterplots. ◆ It's up to the student to determine if the calculator meets the criteria of required computational and graphical capabilities. ■ **Not** allowed: ◆ Enhancements other than those that improve the calculator's computational and/or graphical functionalities are prohibited. Unapproved enhancements include, but are not limited to, keying or scanning text or response templates into the calculator.	Expected*	Expected*

* Although scientific calculators with computational capabilities (standard statistical univariate and bivariate summaries, through linear regression) are allowed, students are expected to use a graphing calculator.

Ask AP teachers to remind students several days before the exam to:

- Bring the appropriate calculator on exam day (students may bring up to 2 permitted calculators).
- Check the features that are required or not permitted.
- Check the batteries in the calculator (fresh batteries are recommended).
- Remember that they can't share calculators with other students.

Teachers should refer students to **apstudents.org/calculators** for the most current list of approved graphing calculators.

EXAM SECURITY Since graphing calculators can be used to store data, including text, proctors should monitor that students are using their calculators appropriately. Attempts by students to use the calculator to remove exam content from the room may result in the cancellation of AP Exam scores. However, calculator memories don't need to be cleared before or after the exam.

For security reasons, some calculators require special instructions.

- Calculators with large display (characters of ≥1") or display raised from the horizontal (tilted or hinged screen) may be visible to other students, so seat students using these calculators at the back of the testing room.
- Calculators with infrared communication capabilities are permitted. However, because data can be exchanged between these calculators if they're aligned and close together, proctors should make sure that students keep their calculators sufficiently far apart, and the infrared ports aren't facing each other.
- Calculators with built-in physical constants, metric conversions, and physics, chemistry, or mathematics formulas are permitted. Calculator memories don't need to be cleared before or after the exam.
- The Hewlett-Packard 48–50 Series and Casio FX-9860 graphing calculators may use memory cards designed for use with those calculators.
- The Casio FX-CG500 calculator is permitted only without the use of the stylus.

Unapproved Calculators and Technology*

- Phones, smartwatches, or wearable technology of any kind
- Portable/handheld computers, tablets, laptops, electronic writing pads
- Models with QWERTY (i.e., typewriter-like) keypads as part of the hardware or software (e.g., TI-92 Plus, Voyage 200)
- Models with pen-input/stylus capability (e.g., Palm, PDAs, Casio ClassPad)
- Models with wireless, Bluetooth, or cellular capability
- Models that require an electrical outlet, "talk"* or make noise, or have a paper tape
- Models that can access the internet
- Models that have cell phone capability or audio/video recording or playing capability
- Models that have a camera, scanning capability, or any other smartphone-type features
- Models with touch-screen capability that aren't on the list of approved graphing calculators (e.g., Casio ClassPad)
- Hardware peripherals such as a stylus, keyboard, or wireless adapter with an approved calculator

*Unless approved by the College Board SSD office as an accommodation

School-Supplied Backup Calculators

It's advisable that schools have a supply of functioning calculators approved by AP with fresh batteries on exam day to give to:

- A student who arrives without a calculator.
- A student who arrives with an unapproved calculator.
- A student whose calculator malfunctions during the administration.

Order an alternate exam for late testing if:

- A student is unable to use the offered calculator.
- A student is unfamiliar with the operation of an offered calculator.
- You run out of or don't have spare calculators and still have students who want and need them.

NOTE: *School-supplied graphing calculators must be on the approved calculator list on pages* ***63–64****.*

Calculator Release Statement

If the option of providing a calculator isn't feasible, or if a student doesn't want to use a calculator, they can take an exam without one. However, if a student chooses to take an exam without a calculator, they must hand copy, date, and sign the Calculator Release Statement (at right) and indicate the name of the exam being taken. Return the release statement in the exam shipment. (See pages 90–94.)

It is my decision to take the AP [Biology] [Calculus] [Chemistry] [Environmental Science] [Macroeconomics] [Microeconomics] [Physics] [Precalculus] [Statistics] Exam without a calculator. I will not use the absence of a calculator as a reason to challenge my score on this exam.

Student Name: _____ *Date:* _____

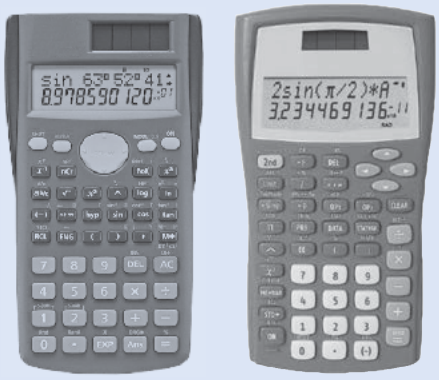
Student Signature: _____ *AP ID:* _____

Acceptable Graphing Calculators

Unacceptable Model with QWERTY Keyboard

Acceptable Four-Function Calculator

Typical Scientific Calculator Models



AP-APPROVED GRAPHING CALCULATORS

Casio	Hewlett-Packard	Radio Shack	Texas Instruments
FX-6000 Series	HP-9G	EC-4033	TI-73
FX-6200 Series	HP-28 Series*	EC-4034	TI-80
FX-6300 Series	HP-38G*	EC-4037	TI-81
FX-6500 Series	HP-39 Series*		TI-82*
FX-7000 Series	HP-40 Series*	**Sharp**	TI-83*
FX-7300 Series	HP-48 Series*	EL-5200	TI-83 Plus*
FX-7400 Series	HP-49 Series*	EL-9200 Series*	TI-83 Plus Silver*
FX-7500 Series	HP-50 Series*	EL-9300 Series*	TI-84 Plus*
FX-7700 Series	HP Prime*	EL-9600 Series*†	TI-84 Plus CE*
FX-7800 Series		EL-9900 Series*	TI-84 Plus CE Python*
FX-8000 Series			TI-84 Plus Silver*
FX-8500 Series		**Other**	TI-84 Plus C Silver*
FX-8700 Series		Datexx DS-883	TI-84 Plus T*
FX-8800 Series		Micronta	TI-84 Plus CE-T*
Graph25 Series		NumWorks*	TI-84 Plus CE-T Python Edition*
FX-9700 Series*		Smart[2]	TI-85*
FX-9750 Series*			TI-86*
FX-9860 Series*			TI-89*
CFX-9800 Series*			TI-89 Titanium*
CFX-9850 Series*			TI-Nspire*
CFX-9950 Series*			TI-Nspire CX*
CFX-9970 Series*			TI-Nspire CX II*
FX 1.0 Series*			TI-Nspire CX II-T*
Algebra FX 2.0 Series*			TI-Nspire CAS*
FX-CG-10*			TI-Nspire CX CAS*
FX-CG-20 Series*			TI-Nspire CX II CAS*
FX-CG-50*			TI-Nspire CX II-T CAS*
Graph35 Series*			TI-Nspire CM-C*
Graph75 Series*			TI-Nspire CM-C CAS*
Graph95 Series*			TI-Nspire CX-C CAS*
Graph100 Series*			TI-Nspire CX II-C CAS*
FX-CG500*†			

* Graphing calculators with the expected built-in capabilities for AP Calculus are indicated with an asterisk. See the ***AP Calculus AB and BC Course and Exam Description***, effective Fall 2020 for details. However, students may bring any calculator on the list to the exam; any model within each series is acceptable. Only approved graphing calculators from the list are permitted for the AP Calculus Exams.

† The use of the stylus is not permitted.

This list will be updated at **collegeboard.org/ap/calculators**, as necessary, to include new approved calculators. Check this list periodically, and before the administration of the exams, to ensure that students have the most up-to-date information.

This list only includes approved graphing calculators. There is not an approved list of scientific (nongraphing) calculators.

APPROVED GRAPHING CALCULATORS FOR THE AP PRECALCULUS EXAM

NEW The graphing calculators listed below—a subset of the full list of approved calculators on the previous page—have the expected built-in capabilities for AP Precalculus.

Casio	Hewlett-Packard	Texas Instruments	Texas Instruments *cont.*
FX-9750 series (G Plus, GA Plus, GII, GIII, and later)	HP Prime	TI-83	TI-Nspire
FX-9860 series		TI-83 Plus	TI-Nspire CX
CFX-9850 series	**NumWorks**	TI-83 Plus Silver	TI-Nspire CX II
CFX-9950 series	NumWorks with Software Version 19.3 and higher	TI-84 Plus	TI-Nspire CX II-T
CFX-9970 series		TI-84 Plus CE	TI-Nspire CM-C
FX 1.0 series	**Sharp**	TI-84 Plus CE Python	TI-Nspire CAS
Algebra FX 2.0 series	EL-9900 series	TI-84 Plus Silver	TI-Nspire CX CAS
FX-CG-10		TI-84 Plus C Silver	TI-Nspire CX II CAS
FX-CG-20 series		TI-84 Plus T	TI-Nspire CX II-T CAS
FX-CG-50		TI-84 Plus CE-T	TI-Nspire CM-C CAS
FX-CG-500 (Using a stylus is not permitted.)		TI-84 Plus CE-T Python Edition	TI-Nspire CX-C CAS
Graph35 series		TI-89 Titanium	TI-Nspire CX II-C CAS
Graph75 series			
Graph95 series			
Graph100 series			

Only graphing calculators from the full list of approved calculators are permitted on the AP Precalculus Exam. Students may bring any graphing calculator on the approved list to the exam—any model within each series is acceptable.

This information is current as of February 2023.