

**Graphing Calculator Usage on the Goal 1(Functions and Algebra)
and
Goal 3 (Data Analysis and Probability) High School Assessment**

Calculators are a fundamental tool for problem solving, reasoning, and real-world applications, which are integral to the Core Learning Goals. The use of technology is expected throughout the mathematics assessments. Each student should have access to the graphing calculator that is used regularly during instruction. The graphing calculator must have the minimum capabilities listed below. It is assumed that each student will know how to use the graphing calculator. Instructions on how to use the graphing calculator will not be provided during the assessment. Students who have graphing calculators with more capabilities will not have an advantage over students who have more limited graphing calculators.

Students will use the graphing calculator to solve problems using graphical, tabular, or symbolic forms of information. Because students will be allowed to choose the method of solving problems that they believe is appropriate, problems will not be labeled as requiring a calculator. The following is a list of possible types of problems for which a graphing calculator might be used:

- Solve systems of linear equations (using a graph, a table, or equations)
- Describe nonlinear functions
- Calculate the equation for a line of best fit
- Extend or represent an arithmetic (additive) or geometric (multiplicative) pattern or sequence
- Determine summary statistics, including mean, median, minimum, maximum, first quartile, third quartile, and interquartile range
- Add and subtract matrices
- Multiply matrices by a scalar

The graphing calculator that a student may use for the assessments **must** have the following minimum capabilities:

- Table functions
- Point plotting
- Intersection of two lines
- Statistics: mean, median, maximum, minimum, quartiles, line of best fit
- Maxima and minima of a function
- Matrices: addition, subtraction, and scalar multiplication

The following are graphing calculators that have the capabilities needed for the high school assessments in mathematics as of August 2009*:

Casio: FX-7700, FX-9750G PLUS, CFX-9800, CFX-9850G, CFX-9850GA PLUS, CFX-9850GB PLUS, CFX-9850GC PLUS, FX-9860G, CFX-9870G, FX 1.0

Hewlett-Packard: HP-38G, HP-39G, HP-39gs

Sharp: EL-9300, EL-9600, EL-9900C

Texas Instruments: TI-82, TI-83, TI-83 PLUS, TI-83 PLUS Silver Edition, TI-84 PLUS, TI-84 PLUS Silver Edition, TI-86, TI-Nspire (without CAS)

* Policy will be revisited as technology develops.

Calculators with the following features are **not** allowed:

- calculators that can communicate with other calculators via infrared beam
- computer algebra systems (CAS)

The memory of **ALL** calculators used during testing must be cleared before and after each test administration.

An online version of an appropriate calculator (currently the TI-84 PLUS Silver Edition) is available for students taking the **online version** of the Algebra/Data Analysis HSA.