

## CALCULUS BC CALCULATOR READINESS

The calculus BC exam requires a graphing calculator. Each calculator is a little different, so it is important that you become familiar with whichever calculator you will be using. If you do not have a graphing calculator, please acquire one before completing this assignment.

The College Board provides a [list of accepted calculators](#). Any of these are acceptable, though I would recommend the TI-84+ because it is the easiest to find tutorials for, and the Numworks (available either through their website or Amazon) because I find it to be the easiest and least frustrating to use.

You are expected to be able to use the graphing calculator to perform four different actions:

- plot the graph of a function within an arbitrary viewing window
- find the zeros of functions (solve equations numerically)
- numerically calculate the derivative of a function
- numerically calculate the value of a definite integral

In addition to these, it is also helpful to be able to define and use functions, and save and access results of calculations in variables.

### Assignment:

For each of these steps, figure out how to accomplish each step for your calculator, identify which of the above skills that step addresses, and then write down the step along with instructions for completing it. The internet is your friend for this assignment.

1. Store the function  $y = \ln(e^x + 1 - \cos x)$  as a function in the calculator.
2. Use the graphing functionality to determine how often  $f(x) = \sqrt{1/2}$  on the interval  $[0,12]$ . You will need to resize your viewing window to do this.
3. Evaluate the function at  $x=3$  and store the result in a variable.
4. Evaluate the derivative of the function at  $x=3$  and store that result in a different variable.
5. Create a new function for the tangent line approximation to  $f(x)$  at  $x=2$  using the above variables.
6. Find all of the roots of  $f(x)$  on the interval  $(0,6)$ , and store them in variables.
7. Find the volume of a solid created by rotating  $f(x)$  about the  $x$  axis between the first two roots found in step 6.

## 2021-22 List of Approved Graphing Calculators

This list was updated in September 2021.

### Casio

|                        |  |                  |
|------------------------|--|------------------|
| FX-6000 Series         | FX-6200 Series                                     | FX-6300 Series   |
| FX-6500 Series         | FX-7000 Series                                     | FX-7300 Series   |
| FX-7400 Series         | FX-7500 Series                                     | FX-7700 Series   |
| FX-7800 Series         | FX-8000 Series                                     | FX-8500 Series   |
| FX-8700 Series         | FX-8800 Series                                     | Graph25 Series   |
| FX-9700 Series*        | FX-9750 Series*                                    | FX-9860 Series*  |
| CFX-9800 Series*       | CFX-9850 Series*                                   | CFX-9950 Series* |
| CFX-9970 Series*       | FX 1.0 Series*                                     | FX-CG-10 *       |
| Algebra FX 2.0 Series* | FX-CG-20 Series*                                   | FX-CG-50*        |
| Graph35 Series*        | Graph75 Series*                                    | Graph95 Series*  |
| Graph100 Series*       | FX-CG500* (The use of the stylus is not permitted) |                  |

### Hewlett-Packard

|               |               |               |
|---------------|---------------|---------------|
| HP-9G         | HP-28 Series* | HP-38G*       |
| HP-39 Series* | HP-40 Series* | HP-48 Series* |
| HP-49 Series* | HP-50 Series* | HP Prime*     |

### Radio Shack

|  |                 |                 |
|--|-----------------|-----------------|
| EL-5200  | EL-9200 Series* | EL-9300 Series* |
| EL-9600 Series* (The use of the stylus is not permitted) | EL-9900 Series* |                 |

## Texas Instruments

|                        |                      |                                 |
|------------------------|----------------------|---------------------------------|
| TI-73                  | TI-80                | TI-81                           |
| TI-82*                 | TI-83*               | TI-83 Plus*                     |
| TI-83 Plus Silver*     | TI-84 Plus*          | TI-84 Plus CE*                  |
| TI-84 Plus CE Python*  | TI-84 Plus Silver*   | TI-84 Plus C Silver*            |
| TI-84 Plus T*          | TI-84 Plus CE-T*     | TI-84 Plus CE-T Python Edition* |
| TI-85*                 | TI-86*               | TI-89*                          |
| TI-89 Titanium*        | TI-Nspire*           | TI-Nspire CX*                   |
| TI-Nspire CAS*         | TI-Nspire CX CAS*    | TI-Nspire CM-C*                 |
| TI-Nspire CM-C CAS*    | TI-Nspire CX-C CAS*  | TI-Nspire CX II*                |
| TI-Nspire CX II-T*     | TI-Nspire CX II CAS* | TI-Nspire CX II-T CAS*          |
| TI-Nspire CX II-C CAS* |                      |                                 |

## Other

|               |          |          |
|---------------|----------|----------|
| Datexx DS-883 | Micronta | NumWorks |
| Smart2        |          |          |