

## Software-Based Calculator Test Cases

1. Add one or more numbers and verify the calculated result when you hit =.
2. Subtract one or more numbers, and verify the calculated result when you hit =.
3. Multiply one or more numbers and verify the calculated result when you hit =.
4. Divide a few numbers and verify the calculated result when you hit =.
5. Verify the AC and C buttons clear the result screen when you hit =.
6. Add, subtract, and multiply using a negative number when you hit =.
7. Add, subtract, multiply, and divide by numbers with decimals when you hit =.
8. Use the MR, M-, and M+ and confirm the memory returns accurate values.
9. Test the CE button clears the last entry.
10. Add, subtract, multiply, and divide negative numbers.
11. Add, subtract, multiply, and divide one or more positive numbers with one or more negative numbers.
12. Add, subtract, multiply, and divide using 0 (zero).
13. Do a few calculations and then hit the AC (All Clear) button or MC (memory clear) button. Do a new calculation, and verify the old values are not used.
14. Calculate a percentage with various positive and negative numbers.
15. Calculate a square root with various positive and negative numbers.
16. Verify the UI functions in standard ways for computer apps.
17. Test whether the user can maximize or minimize the app.

## Boundary Value Analysis Test Cases

- Calculations with 0 (zero)
- Calculations with maximum values. Ex.)  $999,999,999 \times 2$  and verify the result is truncated like  $2e9$
- Calculations with minimum values. Ex.)  $0.0.00$  multiplied by  $1 = 0$
- Calculations with negative values and zero.

## Scientific Calculator Test Cases

Verify the scientific notation.

- Use physical constants in a calculation.
- Calculate one or more exponential values.
- Calculate one or more cosine functions.
- Calculate one or more logarithms.
- Calculate the square root.
- Calculate a number's sine.
- View different options within the scientific notation display.

- Verify the order of operation or BODMAS.

#### UI Test Cases

- Brand or logo.
- Color, shape, height, and length of the device.
- Determine if the visible screen is easy to view.
- Confirm the size of the buttons is accurate.
- Verify the calculator can be turned OFF or ON.
- Verify the print function results in a hard copy print or electronic document that is readable and accurate.
- Confirm the screen and buttons are visible in a variety of light-level conditions.